Gambling Disorder as a Clinical Phenomenon

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2.1 Games and Gambling in Antiquity

The exact origins of gambling have faded into obscurity but its presence dates to antiquity. Archaeological findings offer evidence of games of chance played as long back as approximately 4000 years BC. Murals and artefacts around this period indicate that board games such as the forerunners of draughts and backgammon and astragals (knucklebones) used as dice thrown to determine the number of steps to move playing pieces [1–3] were commonly accepted as leisure pursuits. The oldest known Eastern games of Wei-kin in China and Go in Japan emerged around 2300 years BC. These games relied on chance as the determinant of outcomes, but the exact point in time when players began to risk items of value either to enhance excitement in competition or for personal gain remains unknown. What is known is that reference to gambling can be found in ancient Egyptian mythical accounts of deities and demigods and in Mediterranean and Eastern culture folklores.

Indications are that many games laid the foundation for activities that subsequently met the definition of gambling, that is, an agreement between two or more participants to risk an item of value on the outcome of an event determined wholly or to some extent by chance for purposes of obtaining a gain/profit. Roulette, for example, has its origins in Grecian and Roman soldiers wagering on the turn of numbered chariot wheels; the throwing of dice and lots in appeal to religious divination represents the forerunner of modern dice games; legends about keno claim a history dating back to efforts to raise money to fund wars and build the Great Wall in ancient China; horse and chariot races later evolved into national wagering events; and simple early card games diverged into the multiple card game formats played today, such as poker, baccarat and blackjack. In contemporary times,

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technological and electronic advances have given rise to sophisticated electronic gambling devices mimicking traditional games, and the Internet offers global opportunities for virtually all forms of gambling.

Societal acceptance of gambling has fluctuated from extremes of widespread indulgence to attempted suppression for as long as gambling has been in existence. For example, Confucius (551–479 BC), whose philosophy formed the basis of much Chinese moral reasoning throughout subsequent centuries, reportedly referred to gambling as unproductive and as violating filial duty [4]. There is then evidence of legal proscriptions against gambling in China during the Warring States period (c. 476–221 BC) and during the Tang dynasty (c AD 618–907 [4]). Similar religious and legal restrictions on gambling in Europe were enacted in response to the social and economic impacts of excessive gambling: public disorder, creation of poverty and personal and familial distress, cheating and exploitation and as it was viewed as an activity contrary to Protestant work ethics or religious tenets [5, 6]. Accordingly, religious edicts prohibiting gambling and statutes banning certain activities, limiting losses or preventing recovery of gambling debts were enacted across many jurisdictions. By 1882, virtually every European province prohibited gambling [7] with the temperance movement in the latter part of that decade temporarily successful in tempering the consumption of alcohol and gambling in America. In the current era, the full circle has turned with gambling, although not universally adopted and accepted, becoming a multibillion dollar global industry, incorporating 24/7 convenient, anonymous and easy access to gaming and wagering products through multiple land-based options and via online devices (smartphones, tablets and laptops).

2.2 Gambling to Excess

Numerous anecdotal and case history accounts of individuals, including historical celebrities, falling prey to the lure of gambling have been chronicled over the ages [6]. Documented in these writings is the extent to which individuals wreaked havoc on their wealth, incurred debt leading to poverty and imprisonment in debtor's jail, destroyed marriages and families and succumbed to suicidal ideation [3, 6]. These accounts are insightful in describing the phenomenology associated with 'compulsive' urges driving an individual motivated by the desire to win to persist despite incurring substantial losses and severe emotional distress. The 'addictiveness' of the behaviour indicated by the presence of tolerance [8] and impaired control and preoccupation comparable to alcohol addiction [9] has been frequently described in the popular literature prior to the twentieth century. Exemplary descriptions of the powerful processes inherent in gambling are contained in Pushkin's *The Queen of Spades* [10], Dostoevsky's *The Gambler* [11], Thackeray's *A Gambler's Death* [12] and Saki's *The Stake* [13], a literature base that depicts the phenomenology of the behaviour in comprehensive detail. However, it was not until von Hattinger's [14] psychodynamic description of gambling was published that scientific consideration was given to the idea of excessive gambling representing a clinical phenomenon reflecting the presence of an underlying psychological disorder.

2.3 Gambling Disorder as a Clinical Phenomenon

Between 1914 and 1957, with continuing pockets of interest, psychodynamic explanations were applied to the aetiology of 'compulsive' gambling. Predominantly based on single case or case series reports, the condition was regarded as the symptomatic expression of an underlying psychoneurosis related to pregenital psychosexual phases and Oedipal conflicts, masturbatory complexes and equivalents or the expression of psychic masochism linked to a tendency for self-punishment resulting from unresolved aggressive feelings [15–17]. Although shaping its intervention, the psychodynamic formulation lacked empirical support, retained untestable hypotheses and failed to explain the transitional shift from recreational to impaired control, a process often taking several years. In addition, the gambling was typically not the primary reason for referral, leaving the causal or interactive relationship between the respective conditions unknown.

Derived from experimental manipulations of behaviour, learning theories gained popularity in the 1960s following the seminal studies of Skinner [18] and Pavlov [19] describing operant and classical conditioning paradigms, respectively. This provided an excellent model explaining how overt gambling behaviours were influenced by contingencies of random ratio-delivered schedules of reinforcement. Anderson and Brown [20] advanced a two-factor theory that incorporated operant and classical conditioning principles with individual differences in autonomic/cortical arousal and sensation-seeking personality traits. This theory was predicated on the assumption that certain individuals had a propensity to respond differently to rewards and punishment, with a proclivity to repetitively seek out risky behaviours to maintain optimal levels of hedonic arousal [21].

Jacobs [22] extended these concepts into his general theory of addictions that contained many of the inherent features of Solomon and Corbitt's [23] opponent process model. Briefly, Jacobs [22] argued that chronically hyper- (anxious) or hypo- (depressed) aroused individuals, in combination with psychological states of low self-esteem and experiences of rejection, placed such individuals at risk for pursuing behaviours that fostered homeostatic levels of arousal. Those hyper-aroused, it was suggested, gravitate to low-skills games where their attention is narrowed and focussed, resulting in negative reinforcement, that is, escaping from states of emotional distress [22, 24]. For those hypo-aroused, preferences were directed to higher skill games that engaged their interests resulting in excitement, boosting their affective states.

These early theories highlighted the central role played by biologically determined differences in psychophysiological arousal, the influence of positive and negative reinforcement and personality traits as vulnerability factors leading to a gambling disorder. Cognitive and motivational variables were recognized but did not attract the primary focus of attention at this point. However, cognitive theories gained prominence with the identification of consistent distorted and erroneous beliefs surrounding illusions of control, misunderstanding the mathematics and statistical basis of gambling and concepts of randomness and mutual independence of chance events [25–27]. Chasing losses as a motivation is one of the overarching

factors defining a gambling disorder as described by Lesieur [28]. Behavioural and cognitive theories are not mutually exclusive but contain behavioural and motivational components that interact with each other to maintain persistence despite serious deleterious consequences.

Given its repetitive persistent nature, it is unsurprising that analogies between gambling and substance addiction have been promulgated. This perspective was formalised in the DSM-IV [29], where the criteria for what was then termed 'pathological gambling' were revised to explicitly draw attention to the presence of many features commonly found in substance use disorders, including withdrawal symptoms, tolerance and preoccupation/dependence and affective disturbances [30].

Irrespective of the explanatory model applied, phenomenological features of emotional dependence on gambling, impaired control over behaviours, concurrent substance use and affective disturbances and persistence in the face of accumulating stresses and distress characterise gambling disorder as a clinical entity. Typical features include the presence of depression, suicidal ideation, anxiety and emotional distress, marital and familial conflicts, impaired work/study productivity, commission of illegal acts to maintain habitual gambling behaviours and substance use. Cognitive distortions result in individuals overestimating personal skills and probabilities of winning and lead to further attempts to recoup losses through continued gambling.

2.4 Current Diagnostic Criteria for Gambling Disorder

Although recognized as a clinical entity for over 40 years since its inclusion within ICD-9 [31] and DSM-III [32], debate regarding inconsistencies in the terminology used, categorization, and criteria used to diagnose a gambling disorder have been prevalent. In particular, gambling disorders have been variably considered to constitute an impulse control disorder, an addictive behaviour or fall on an obsessive-compulsive spectrum (see [33], for an overview). In the following section, the development of the current diagnostic criteria guided by phenomenological features that consolidate gambling as a clinical disorder will be outlined.

With the release of the DSM-5 [34], the following diagnostic criteria were given for the diagnosis now referred to as 'gambling disorder' (the earlier name of 'pathological gambling' was dropped as the term 'pathological' was considered to be pejorative [35]). In order to receive a diagnosis of a gambling disorder, individuals must meet four of the nine criteria over a 12-month period. Their behaviour must also not be better accounted for by a manic episode.

1. Needing to gamble with increasing amounts of money in order to achieve the desired excitement.
2. Feeling restless or irritable when attempting to cut down or stop gambling.
3. Making repeated unsuccessful attempts to control, cut back or stop gambling.
4. Often experiencing 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 to gamble).

5. Often gambles when feeling distressed (e.g. helpless, guilty, anxious, depressed).
6. After losing money gambling, often returns another day to get even ('chasing' one's losses).
7. Lies to conceal the extent of involvement with gambling.
8. Jeopardising or losing a significant relationship, job or educational or career opportunity because of gambling.
9. Has relied on others to provide money to relieve desperate financial situations caused by gambling.

As well as the aforementioned name change, these criteria represented several changes from the previous DSM-IV-TR criteria for pathological gambling [36]. Firstly, the diagnosis was moved to the section titled 'Substance Use and Related Disorders', where it is the sole member of a grouping titled 'non-substance-related disorders'. The DSM-5 workgroup on gambling cited research that highlighted clinical, neurological, epidemiological and genetic similarities between gambling and substance use disorders as the key reason for the move, although they noted that there were dissenting voices [37]. The research into the similarities and differences between gambling and substance use disorders will be discussed in detail later in this volume (see Chap. 12).

The second change that was made to the criteria in the DSM-5 was the dropping of the criterion included in past editions 'has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling'. The workgroup reported that this criterion had been removed as only a minority of the treatment population endorsed this criterion, and those who did frequently also reported meeting multiple other criteria, thus diminishing this criterion's usefulness in the diagnosis of gambling disorder [37]. Other writers have disputed this change, noting that illegal acts remain relatively common in treatment samples of gamblers, and the retention of this criterion would draw attention to the relationship between gambling disorder and legal issues [38]. Indeed, regardless of the decision made to exclude this criterion, those working with gamblers should remain aware of the high rates of co-occurrence between gambling disorder and illegal activities. Recent evaluations of the new DSM-5 criteria across various treatment and community samples found that over 40% of those engaged in treatment for gambling-related problems reported engaging in illegal activates [39]. Furthermore, previous work has found that those who have experienced arrests or incarceration as a result of gambling-related crime were more likely to display features suggestive of antisocial personality disorder and substance use disorders [40]. It has also been suggested that gamblers who report illegal activities may also require more intensive treatment than those who do not [41]. Thus, the relationship between gambling and illegality should remain a clinical and research focus despite the illegal acts criterion being removed in the DSM-5.

The final change in the diagnostic criteria for the DSM-5 was the reduction of the number of criteria needs for a diagnosis. In the DSM-IV, meeting five out of the ten listed criteria was necessary in order to obtain a diagnosis of pathological gambling. In the DSM-5, this was reduced to four out of nine criteria. The rationale for this reduction was that it would ensure consistency with previous diagnosis rates

following the removal of the illegal acts criterion [35]. Empirical studies since then have shown that this change in the threshold for diagnosis resulted in either no change or in a very slight increase in the numbers of individuals meeting criteria for disordered gambling [39, 42, 43]. However, comparisons with other measures of gambling severity have led to the claim that the reduced threshold leads to more consistent diagnosis relative to the previous criteria [37]. Taken together, these findings suggest that there does appear to be sound empirical support for the changes made to the diagnostic criteria in the DSM-5.

2.5 Diagnosis of Subclinical Gambling

For many clinicians, diagnostic issues are of secondary importance: when an individual presents to a service asking for treatment for their gambling, they will receive it, and whether they meet strict diagnostic criteria is purely of academic interest. However, in some treatment settings, particularly in the United States where insurance companies often dictate that a current diagnosis is necessary for treatment coverage, ensuring that those who seek treatment would also meet some formal diagnosis can make the difference between those who are experiencing gambling-related harm receiving treatment or not. It is in this context that researchers and commentators have often proposed further changes or additions to diagnostic systems used for gambling-related behaviours that attempt to capture those who may not meet DSM-5 criteria for gambling disorder but who may nonetheless be experiencing significant distress or harm as a result of their gambling.

There have been various proposals for how to classify such 'subclinical' gamblers. One proposal has been to model the criteria for the DSM-5 on the classification system used for substance use disorders, where the endorsement of only two symptoms is required for a diagnosis [38]. Under such a system, gamblers would then be further classified into subgroups by the number of criteria met. For example, individuals endorsing two to four symptoms could be classified as having 'disordered gambling, moderate', while those meeting more than four criteria could be classified as having 'disordered gambling, severe' [38]. Another, which was proposed when developing the National Opinion Research Center DSM Screen for Gambling Problems (NODS), a commonly used population-based screening tool for gambling problems, was to classify those who meet one or two of the previous DSM-IV criteria as an 'at-risk' gambler, those who meet three or four classified as a 'problem gambler' and those who meet five or more as a 'pathological gambler' [44]. Other classification schemes refer to 'levels' of gambling, which are based on both gambling severity and willingness to seek treatment, ranging from 'level 0' representing those who have never gambled, up to 'level 4' representing those who both meet diagnostic criteria for a gambling disorder and show willingness to enter treatment [45].

These and similar suggestions of incorporating previously undiagnosed less severe categorisations of gamblers were rejected by the DSM-5 workgroup as it would result in a large increase in the rates at which gambling disorder was diagnosed [37]. However, whatever terms are eventually settled on ([46], documented

14 different classification schemes), it appears clear that there is a large group of individuals who do not meet full diagnostic criteria for gambling disorder, and yet have come to the attention of researchers and clinicians. Work with individuals in this subclinical group has shown that of the current diagnostic criteria, they are more likely to endorse the more 'cognitive'-type symptoms (i.e. lying, gambling to escape problems, preoccupation with gambling) than they are to endorse other symptom clusters (with the exception of the 'chasing losses' criteria, which almost all treatment-seeking gamblers meet [47]).

Despite the decision not to include a subclinical diagnosis in the current edition of the DSM, there is evidence that those who fall into this category may benefit from clinical attention. It has been demonstrated that adults who report symptoms of disordered gambling but do not meet full DSM criteria for gambling disorder (or its previous incarnation, pathological gambling) show increased rates of other Axis I psychiatric disorders [48], higher rates of alcohol and substance use problems [49] and higher rates of suicidal thoughts [50] than the general population. Gambling disorder symptoms are also associated with problem behaviour in adolescents [51]. Furthermore, rather than progressing in a linear fashion as had been previously assumed, longitudinal research has shown that individuals' gambling frequently moves between severity levels [52]. Taken together, these findings should serve as a reminder to anyone working in the gambling field to not narrow their focus solely on those who meet current diagnostic criteria for a gambling disorder.

2.6 A Harm-Based Classification: The Concept of 'Problem Gambling'

Given evidence that there are many individuals experiencing gambling-related harms who do not meet strict criteria for gambling disorder, it is unsurprising that in many places around the world, a different conceptualisation of difficulties related to gambling is used. Rather than focussing on behavioural symptoms, as is done with both gambling disorder and its predecessor pathological gambling, the notion of 'problem gambling' instead focusses on harm in an individual's life as a result of the gambling. The term problem gambling is generally held to refer to any pattern of gambling that is resulting in disruptions to an individual's social, occupational or psychological functioning [46]. While the precise definition of the term problem gambling can differ between jurisdictions, a commonly cited definition for problem gambling is that put forward by Ferris and Wynne [53], which defines it as 'gambling behaviour that creates negative consequences for the gambler, others in his or her social network, or for the community' (p. 58). With such a definition of problem gambling, the aforementioned difficulties with a symptom-based approach often excluding some individuals who are experiencing gambling-related harms are avoided, as the harm itself becomes the hallmark of the problem. Similar definitions have been used in public health contexts in the United Kingdom, Canada and Australia (see [46] for a brief review). An advantage of the problem gambling approach in public health contexts is that it is useful in identifying individuals with lower levels of gambling-related harms and

encouraging them to seek treatment before they may meet full diagnosis for a gambling disorder or pathological gambling [54].

However, there are also disadvantages of such an approach as well, given its focus on subjective judgements of 'harm'. Walker [55] gave the example of an individual who has with a spouse with strict religious or moral objections to gambling who buys a weekly lottery ticket. While most people would not consider this a behaviour worthy of clinical attention, it is conceivable that such an individual would be experiencing subjective harm as a result of their gambling, if it resulted in arguments with their spouse. Blaszczynski and Nower [54] further note that defining gambling based solely on subjective measures of harm runs the risk of categorising together those with minor levels of gambling-related harm with those with serious difficulties in controlling and regulating their impulses, potentially resulting in a large, heterogeneous group. To overcome such disadvantages, a compromise definition was put forward by Blaszczynski et al. [56], where problem gambling was defined as 'a chronic failure to resist gambling impulses that result in disruption or damage to several areas of a person's social, vocational, familial or financial functioning'. Such a definition includes both the sense of subjective harm, as well as the notion that the individual has a diminished or impaired ability or willingness to resist their impulses to gamble. However, the most important message of this discussion is that researchers, clinicians and policy-makers working in the area need to be aware of the advantages and disadvantages of whatever approach they take to defining gambling-related difficulties and to select that which best suits their purposes.

2.7 Gambling-Related Harm

The centrality of harm to the concept of problem gambling raises obvious questions: How do we define gambling-related harm? And what harms are commonly observed clinically in gamblers? Langham et al. [57] have recently proposed a conceptual framework to assist in answering both of these questions. Based on both a literature review and focus group research with clinical samples of gamblers, a proposed definition of gambling-related harm was given as 'any initial or exacerbated adverse consequence due to an engagement with gambling that leads to a decrement to the health or wellbeing of an individual, family unit, community or population' [57]. Langham et al. [57] then went on to identify seven domains across which gamblers may experience harm: financial, relational, emotional/psychological, health, cultural, work/study and criminal activity. For each of these domains, there is clear evidence of the potential for gambling to cause harms.

Financial harms are one of the easily identified harms as a result of problem gambling, as they are often directly related to gambling losses. They may also contribute to the harms seen in other domains, as financial losses have the potential to result in marital discord, psychological distress, neglect of healthcare, disruptions at work and criminal activity in an attempt to repay debts. For example, gamblers who have declared bankruptcy were significantly more likely to also be experiencing marital, legal, psychological and work-related disruptions [58]. Financial harms

should always be investigated by clinicians working with gamblers, given that they are one of the key motivators for gamblers seeking treatment [59] and are one of the key variables associated with gambling-related suicide [60].

The second identified area of harms caused by gambling identified by Langham et al. [57] were relational harms, which include disruptions in the relationships that gamblers have with their spouse, children or other family members or friends. These harms can be a direct result of the gambler neglecting the relationship due to time spent gambling or due to lack of trust as a result of the gambler lying about their behaviour. Several studies have found that gambling is a potential risk factor for marital discord and divorce [61, 62], domestic violence [63] and child maltreatment [64]. The recognition of such harms has led to the suggestion of providing counselling and treatment directed towards the family members of problem gamblers [65] or for treating problem gambling in the context of family issues [66].

Emotional and psychological distress was the next domain of harm identified by Langham et al. [57]. Emotional distress can result from feelings of hopelessness stemming from poorly controlled behaviour, a lack of security as a result of financial or relational disruptions or shame and stigma associated with gambling. Gambling has been correlated with psychiatric diagnoses generally [48] and with depression and other mood disorders specifically [67, 68]. The existence of stigma and shame around problem gambling should also be noted by clinicians working with problem gamblers, as it may constitute a key barrier to individuals seeking treatment for gambling-related problems [59, 69].

Decrements to health were the fourth domain identified by Langham et al. [57] as an area of potential gambling-related harm. Health problems may result from gamblers neglecting their health due to the time and money they spend gambling, from the stress they experience as a result of their gambling, from living a sedentary lifestyle as a result of time spent gambling or through having no financial resources to engage in more health-positive behaviours. Problem gambling has been associated with poorer physical health and greater numbers of reported physical health problems [70–72]. A large epidemiological survey has specifically found that pathological gambling was specifically associated with higher rates of tachycardia, angina, cirrhosis and other liver diseases, even after controlling for demographic and behavioural risk factors [73]. These findings highlight the toll that gambling may take on physical as well as emotional health.

The fifth domain identified by Langham et al. [57] was cultural harms, which related to the proposal that gambling caused disconnections between gamblers and their cultural beliefs, roles and practices. This process may include distress as a result of going against cultural norms or isolation from a cultural community as a result of gambling. While such harms are more difficult to measure due to their more diffuse conceptualisation, problem gambling has been associated with feelings of loneliness and social isolation [74], and clinicians working with problem gambling should be cognizant of how cultural factors may be impacting on a gambler's psychosocial functioning (for a review on this topic, see [75]).

Reduced performance at work or study was also identified by Langham et al. [57] as an area for potential harm caused by gambling. These harms may result from

being distracted at school, university or work as a result of gambling activities, increased absenteeism as a result of not being able to pay for transportation or not being able to pay for work or study tools. Problem gambling has been associated with poorer grades in adolescents [51] and in college students [76]. Problem gambling is also associated with poor work productivity in adults [77], as are financial losses resulting from gambling [78]. The potential for gambling to lead to problems at work should be of particular attention to clinicians working with problem gamblers, due to the importance of problem gamblers needing to maintain regular work in order to address some of their gambling-related debts.

The final domain identified by Langham et al. [57] was criminal acts. As noted in the previous discussion on the changes in the DSM criteria for pathological gambling/gambling disorder, criminal acts are often a sign of more severe gambling pathology, as they represent a desperate attempt to pay back gambling-related losses, with 40% of those engaged in treatment for gambling-related problems reporting engaging in illegal activates [39].

While the above classification of gambling harms has focussed on harms experienced by gamblers and those in close familiar or work relationships with them, Langham et al. [57] identified the potential for more community-wide harms resulting from problem gambling, in forms such as increased levels of debt and bankruptcies, reliance on government support, decreased community-wide economic productivity or increases in crime rates. They also suggested that harms related to gambling have the potential to cross generations, as children and/or grandchildren of problem gamblers may potentially be impacted in lasting ways (e.g. children of problem gamblers experiencing ongoing psychological disturbances as a result of neglect or homelessness that follows from a parent's gambling). These wider harms, while necessarily more difficult to quantify and measure, require further attention from future research.

2.8 Conclusions

Although both gambling and efforts to control it have long histories, it has only been a focus of clinical attention since the twentieth century. At present, there are several competing accounts that have been put forward to explain gambling behaviour. Given that there is no universally accepted theoretical account of gambling, it is unsurprising that there is still considerable debate over the most appropriate way to define excess gambling and its associated symptoms. Both the behavioural symptom-based DSM-5 diagnosis of 'gambling disorder' and the harm-focussed concept of 'problem gambling' have their advantages and disadvantages, and researchers, clinicians and policy-makers working in the field should be aware of these differences when selecting which conceptualisation is most appropriate to use in their work. What does not appear to be in debate is the recognition that a proportion of individuals gamble to excess, exhibit features of impaired control and suffer psychological distress, supporting the notion that gambling to excess in this subpopulation represents a clinical condition.

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