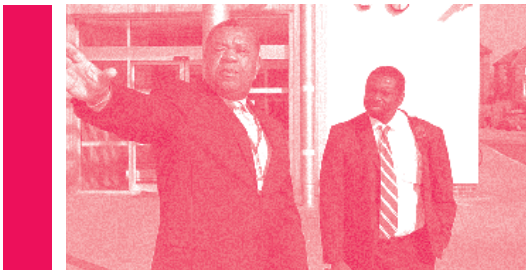
Breakthrough Britain

Ending the costs of social breakdown



THE CENTRE FOR SOCIAL JUSTICE

Special report: Gambling addiction in the UK

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Following considerable pressure from special interest groups arguing that our Addictions Working Group had to address the problem of gambling we commissione the following report from professor Mark Griffiths. There is evidence that gambling contributes to high levels of family breakdown and is closely linked to other addictions such as alcohol and drugs

Background: How have we got here?

On 18 October 2004 a Gambling Bill was introduced into Parliament. Following consideration by the House of Commons and the House of Lords, it received Royal Assent on 7 April 2005, and became the Gambling Act 2005. The initial target for full implementation of the Act is 1 September 2007. It has been recognised that the introduction of this new legislation may have important psychosocial implications for the general public through changing patterns of gambling and hence rates of problem gambling (Griffiths, 2004). Gambling is a popular activity and recent national surveys into gambling participation (including the National Lottery), show that over 70 per cent of adults gamble annually (Sproston, Erens & Orford, 2000; Creigh-Tyte & Lepper, 2004).

Although most people gamble occasionally for fun and pleasure, gambling brings with it inherent risks of personal and social harm. According to the one and only national prevalence survey, there are approximately 300,000 problem gamblers in the UK which equates to just under 1% of the adult population (Sproston et al, 2000). Problem gambling can negatively affect significant areas of a person's life, including their physical and mental health, employment, finances and interpersonal relationships (e.g. family members, financial dependents) (Griffiths, 2004). There are significant co-morbidities with problem gambling, including depression, alcoholism, and obsessive-compulsive behaviours. These co-morbidities may exacerbate, or be exacerbated by, problem gambling. Availability of opportunities to gamble and the incidence of problem gambling within a community are known to be linked (Griffiths, 2003a; Abbott & Volberg, in press). A review of the accessibility and availability of gambling addiction services, as well as raising awareness among general

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Note: Much of the background material in this report was first published by the author in a previous report for the British Medical Association, Gambling Addiction and its Treatment Within the NHS (2007).

practitioners (GPs) and other healthcare workers of these services and other relevant treatments, is therefore essential as the target date for full implementation of the Gambling Act 2005 draws near.

Gambling legislation: Legalisation of gambling in the UK has largely been a 20th century development. Bingo was brought to Britain by troops returning from the Second World War, and with the Betting and Gaming Act 1960, bingo halls were set up throughout the country. The legalisation of casinos under the 1960 Act limited the number of gaming machines in each venue to 10, although the difficulty in enforcing this led to further liberalisation under the Gaming Act 1968. The 1960 Act also legalised off-course bookmakers for betting on competitive sports events. A 1934 Act legalised small lotteries, which was further liberalised in 1956 and 1976. In 1994, the UK's largest lottery – the National Lottery – was introduced under government licence. Several games are now run under this brand, including Lotto, Euro Millions, and Thunderball.

Currently, most gambling in Britain is regulated by the Gambling Commission on behalf of the DCMS under the Gambling Act 2005. This Act of Parliament significantly updated gambling laws, including the introduction of a new structure of protections for children and vulnerable adults, as well as bringing the burgeoning Internet gambling sector within British regulation for the first time. The Gambling Act 2005 extends to the whole of Great Britain. Separate arrangements have been developed for Northern Ireland. The DCMS is working with the Gambling Commission, local authorities, problem gambling charities, the gaming industry, and other interested stakeholders to oversee the implementation of the Act. The target for full implementation is 1 September 2007. The new system is based on tri-partite regulation by the new Gambling Commission, licensing authorities and by the government.

Gambling Commission: The Gambling Commission, which replaced The Gaming Board, is the new, independent, national regulator for commercial gambling in Great Britain. It will issue operating licences to providers of gambling and personal licences to certain personnel in those operations. Its remit will encompass most of the main forms of commercial gambling, including casinos, bingo, betting, gaming machines, pool betting and the larger charity lotteries. It will license providers that operate premises and those that offer gambling through 'remote' technologies, like the internet and mobile telephones. The commission may impose conditions on licences and issue codes of practice about how those conditions can be achieved. Where licence conditions are breached, various administrative and criminal sanctions can be applied.

Licensing authorities: Licensing authorities (in England and Wales, local authorities, and in Scotland, Licensing Boards) will license gambling premises and issue a range of permits to authorise other gambling facilities in their local-

ity. Authorities will be independent of government and the Gambling Commission, but in the exercise of their functions they must have regard to guidance issued by the commission. Authorities will have similar regulatory powers to the commission with respect to their licensees, including powers to impose conditions, but they will not be able to impose financial penalties. The number of casinos, racecourses, bookies and bingo halls requiring a gaming licence will be approximately 30,000.

The government: The government has responsibility for setting various rules on how gambling is conducted. For example, it will make regulations defining categories of gaming machine. Powers are also available for the government to set licence conditions on operating and personal licences, and for the government, in England and Wales, and the Scottish Executive, in Scotland, to set conditions on premises licences. In some cases licensing authorities will be able to alter these central conditions. The government also wishes to see a sustainable programme of research into the causes of problem gambling and into effective methods of counselling and treatment intervention. The government has actively supported the creation of an industry-funded Responsibility in Gambling Trust to take forward these and other programmes.

An important aspect of the government's policy is the power of the Gambling Commission to intervene in the operation of gambling across the entire industry so that it can address factors that evidence suggests are related to risks of problem gambling. In this context, the government proposes new safeguards for gaming machines. These will be enforced through statutory instruments, licence conditions and codes of practice. They may include the powers:

- To control speed of play
- To control game design features such as 'near misses' and progressive tiers, which may reinforce incentives to repeat play
- To require information about odds and actual wins or losses in the play session to be displayed on screen
- To require 'reality checks' or the need to confirm continuing play
- To implement loss limits set by players before starting through use of smart card technology
- To vary stake and prize limits.

Dedicated gambling environments: At present there are approximately 140 casinos, 970 bingo halls, 8,800 betting offices, 1,760 arcades, 19,000 private members clubs and 60 racecourses throughout the UK. An important element of the introduction of the Gambling Act 2005 is the licensing of 17 new casinos in addition to those already in existence. Licenses for eight large casinos, eight smaller casinos and a super-casino are currently being offered. The new

super-casino (provisionally awarded to Manchester) will have a 5,000 square metre gaming area largely filled with 1,250 unlimited-jackpot slot machines. The 16 smaller venues will offer fewer slot machines with much lower jackpots, but will probably support more poker games.

Online gambling: The regulation of online gambling is fraught with problems. Preventing underage gambling is difficult, if not impossible, as there is no way of determining whether an adolescent or child is using a parents' credit or debit card to gamble online. Likewise, it is impossible to tell whether a person is gambling while under the influence of alcohol or other drugs, or is suffering from a gambling addiction. The 24-hour availability of online gambling is problematic for those with, or at risk of developing, gambling problems, as there is currently nothing stopping a person from gambling 24-hours a day (Griffiths & Parke, 2002; Griffiths, 2003c).

Problem gambling: What do we know?

Definition of gambling: Gambling is a diverse concept that incorporates a range of activities undertaken in a variety of settings. It includes differing sets of behaviours and perceptions among participants and observers (Abbott & Volberg, 1999). Predominantly, gambling has an economic meaning and usually refers to risking (or wagering) money or valuables on the outcome of a game, contest, or other event in the hope of winning additional money or material goods. The activity varies on several dimensions, including what is being wagered, how much is being wagered, the expected outcome, and the predictability of the event. For some things such as lotteries, most slot machines and bingo, the results are random and unpredictable. For other things, such as sports betting and horse racing, there is some predictability to the outcome and the use of skills and knowledge (e.g. recent form, environmental factors) can give a person an advantage over other gamblers. Some of the UK's most common types of offline commercial forms of gambling are summarised below.

A summary of the most common forms of offline commercial gambling in the UK

The National Lottery: National lottery game where players pick six out of 49 numbers to be drawn bi-weekly for the chance to win a large prize. Tickets can be bought in a wide variety of outlets including supermarkets, newsagents or petrol stations.

Bingo: A game of chance where randomly selected numbers are drawn and players match those numbers to those appearing on pre-bought cards. The first person to have a card where the drawn numbers form a specified pattern is the winner. Usually played in bingo halls but can be played in amusement arcades and other settings (e.g. church hall).

Card games (e.g. poker, bridge, blackjack): Gambling while playing card games

either privately (e.g. with friends) or in commercial settings (e.g. land-based casino) in an attempt to win money.

Sports betting: Wagering of money for example on horse races, greyhound races or football matches. Usually in a betting shop in an attempt to win money.

Non-sports betting: Wagering of money on a non-sporting event (such as who will be evicted from the 'Big Brother' house) usually done in a betting shop in an attempt to win money.

Scratchcards: Instant win games where players typically try to match a number of winning symbols to win prizes. These can be bought in the same types of outlet as the National Lottery.

Roulette: Game in which players try to predict where a spinning ball will land on a 36-numbered wheel. This game can be played with a real roulette wheel (e.g. in a casino) or on an electronic gaming machines (e.g. in a betting shop).

Slot machines (e.g. fruit machines, fixed odds betting terminals): These are stand-alone electronic gaming machines that come in a variety of guises. These include many different types of 'fruit machine' (typically played in amusement arcades, family leisure centres, casinos, etc) and fixed odds betting terminals (FOBTs) typically played in betting shops.

Football pools: Weekly game in which players try to predict which football games will end in a score draw for the chance of winning a big prize. Game is typically played via door-to-door agents.

Spread betting: Relatively new form of gambling where players try to predict the 'spread' of a particular sporting activity such as the number of runs scored in a cricket match or the exact time of the first goal in a football match in an attempt to win money. Players use a spread betting agency (a type of specialised book maker).

As can be seen above, gambling is commonly engaged at a variety of environments including those dedicated primarily to gambling (e.g. betting shops, casinos, bingo halls, amusement arcades), those where gambling is peripheral to other activities (e.g. social clubs, pubs, sports venues), and those environments where gambling is just one of many things that can be

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Notes Most of these forms of gambling can now be done via other gambling channels including the internet, interactive television and/or mobile phone. [b] There are other types of gambling such as dice (casino-based 'craps'), keno (a fast draw lottery games) and video lottery terminal machine. However, these are either unavailable or very rare in the UK. [c] Technically, activities such as speculation on the stock market or day trading are types of gambling but these are not typically viewed as commercial forms of gambling and they are not taxed in the same way.

done (e.g. supermarkets, post offices or petrol stations). In addition, most types of gambling can now be engaged in remotely via the Internet, interactive television and/or mobile phone. This includes playing roulette or slot machines at an online casino, the buying of lottery tickets using a mobile phone or the betting on a horse race using interactive television. In these remote types of gambling, players use their credit cards, debit cards or other electronic forms of money to deposit funds in order to gamble (Griffiths, 2005a). Issues surrounding remote gambling will be examined later in this report.

Definition of terms: In the UK, the term 'problem gambling' has been used by many researchers, bodies, and organisations, to describe gambling that compromises, disrupts or damages family, employment, personal or recreational pursuits (Budd Commission, 2001; Sproston et al, 2000; Griffiths, 2004). The two most widely used screening instruments worldwide are the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) for pathological gambling (American Psychiatric Association, 1994), and the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) (see Appendices 1 and 2). Both screening instruments were used to measure problem gambling in the only British Gambling Prevalence Survey (BGPS) to date. Further, these two screening tools are the most widely used by UK researchers and other UK service providers in patient consultations (e.g. GamCare). The screens are based on instruments used for diagnostic purposes in clinical settings, and are designed for use in the general population (Sproston et al, 2000).

There is some disagreement in the literature as to the terminology used, as well as the most appropriate screens to diagnose and measure the phenomenon. Researchers internationally are beginning to reach a consensus over a view of problem gambling that moves away from earlier, clinical often heavily DSM-based definitions. For instance, early conceptions of 'pathological gambling' were of a discrete 'disease entity' comprising a chronic, progressive mental illness, which only complete abstinence could hope to manage. More recent thinking regards problem gambling as behaviour that exists on a continuum, with extreme, pathological presentation at one end, very minor problems at the other, and a range of more or less disruptive behaviours in between. Moreover, this behaviour is something that is mutable. Research suggests it can change over time as individuals move in and out of problematic status and is often subject to natural remission (Hayer, Meyer & Griffiths, 2005). Put more simply, gamblers can often move back to non-problematic recreational playing after spells of even quite serious problems. This conception fits in with an emphasis on more general public health, with a focus on the social, personal and physical 'harms' that gambling problems can create among various sectors of the population, rather than a more narrow focus on the psychological and/or psychiatric problems of a minority of 'pathological' individuals. Such a focus tends also to widen the net to encom-

pass a range of problematic behaviours that can affect much larger sections of the population.

The screening tools that are currently used to diagnose the existence and severity of problem gambling reflect this change of focus. There have been criticisms of both the DSM-IV and the SOGS. In part, these criticisms stem from an acknowledgment that both screens were designed for use in clinical settings, and not among the general population, within which large numbers of individuals with varying degrees of problems reside. Other alternative screening instruments have been developed, and these are increasingly being used internationally (Abbott, Volberg, Bellringer & Reith, 2004). One such screening tool is the Problem Gambling Severity Index (PGSI), which was developed in Canada and has been used in that country, the USA and Australia. This screen will replace the SOGS in the upcoming BGPS. This survey will provide comprehensive data on the prevalence and distribution of problem gambling in this country. It will therefore be useful for practitioners to have some understanding of the types of screening tools it will use, as well as the different orientations that lie behind them.

A 'harm based' conception of problem gambling has implications for policy and treatment. Given that the most severe cases of pathological gambling are one of the most difficult disorders to treat (Volberg 1996), and given that, at various points in their lives, hundreds of thousands of people in the general population may experience some degree of gambling-related harms, it becomes important to provide intervention strategies that can prevent this potentially larger group developing more serious problems. To this end, public health education and awareness-raising initiatives come to the fore, and these are recognised internationally as the most cost-effective way of dealing with problem gambling in the long term. (Shaffer, Hall & Vander Bilt, 1999; Abbott et al 2004; National Gambling Impact Study Commission, 1999). Such strategies have been successfully deployed in countries such as Australia, New Zealand and Canada.

There is a multitude of terms used to refer to individuals who experience difficulties related to their gambling. These reflect the differing aims and emphases among various stakeholders concerned with treating patients, studying the phenomenon, and influencing public policy in relation to gambling legislation. Besides 'problem' gambling, terms include (but are not limited to) 'pathological', 'addictive', 'excessive', 'dependent', 'compulsive', 'impulsive' 'disordered', and 'at-risk' (Griffiths & Delfabbro, 2001; Griffiths, 2006). Terms are also employed to reflect more precisely the differing severities of addiction. For example, 'moderate' can refer to a lesser level of problem, and 'serious problem gambling' for the more severe end of the spectrum.

Although there is no absolute agreement, commonly 'problem gambling' is used as a general term to indicate all of the patterns of disruptive or damaging gambling behaviour. This report follows this precedent, employing the use of the term 'problem gambling' to refer to the broad spectrum of gambling-relat-

ed problems. Problem gambling must be distinguished from social gambling and professional gambling. Social gambling typically occurs with friends or colleagues and lasts for a limited period of time, with predetermined acceptable losses. There are also those who gamble alone in a non-problematic way without any social component. In professional gambling, risks are limited and discipline is central. Some individuals can experience problems associated with their gambling, such as loss of control and short-term chasing behaviour (whereby the individual attempts to recoup their losses) that do not meet the full criteria for pathological gambling (American Psychiatric Association, 1994).

Social Context: Research into gambling practices, the prevalence of problem gambling, and the socio-demographic variables associated with gambling and problem gambling, has not been considered part of mainstream health research agendas until quite recently. The BGPS (Sproston et al, 2000) was the first nationally representative survey of its kind conducted in Britain. The extent of gambling activity, as measured in the survey, revealed gambling to be a popular activity in Britain. In the year covered by the survey, gambling was engaged in by almost three-quarters of the population (72%), with the most popular gambling activity being the National Lottery Draw (i.e., Lotto). Two-thirds of the population bought a National Lottery ticket in the year covered by the survey (65%), while the next most popular gambling activity was the purchase of scratchcards (22%), followed by playing fruit machines (14%), horse race gambling (13%), football pools (9%) and bingo (7%). For a large number of people (39% of those who purchased national Lottery tickets), the National Lottery Lotto game was the only gambling activity they participated in.

The BGPS also found that men were more likely than women to gamble (76% of men and 68% of women gambled in the year covered by the survey), and tended to stake more money on gambling activities. The gambling activities men and women participate in were also varied. Men were more likely to play football pools and fruit machines, bet on horse and dog races, and to make private bets with friends, while women were more likely to play bingo, and tended to participate in a lesser number of gambling activities overall (Sproston et al, 2000).

There are also cultural variations in the prevalence and type of gambling activities. For instance, in other cultures there is greater participation in games like dice, or betting on cockfights. The type of gambling activity engaged in also differs according to social class. Although gambling is popular among people of all social classes, people in social class I are more likely to go to casinos (5%) than play bingo (3%), while the opposite is true among people in social class V, who have a participation rate in bingo of 20 per cent and casinos only 1 per cent. Income is a factor in gambling participation, with people living in low-income households (under £10,400) being the least likely to gamble. In general, participation in gambling activities tends to increase along with

household income until around the level of £36,000, after which participation rates level off and decline slightly (Sproston et al, 2000). However, it must be noted that those in the lower classes spending the same amount on gambling as those in higher social classes will be spending a disproportionately higher amount of disposable income on gambling.

Examination of prevalence and socio-demographic variables associated with problem gambling underaken in the BGPS revealed that between 0.6 per cent and 0.8 per cent (275,000 to 370,000 people) of the population aged 16 and over were problem gamblers (Sproston et al, 2000). In comparison to other countries (such as Australia, the United States, New Zealand and Spain which have problem gambling rates of 2.3, 1.1, 1.2 and 1.4% respectively), the number of problem gamblers in Britain is – based on the 2000 prevalence survey – relatively low (Sproston et al, 2000).

Profiling: The BGPS revealed that there were a number of socio-demographic factors statistically associated with problem gambling. These included being male, having a parent who was or who has been a problem gambler, being separated or divorced and having a low income. Low income is one of the most consistent factors associated with problem gambling worldwide. This may be both a cause and an effect. Being on a low income may be a reason to gamble in the first place (i.e., to try and win money). Additionally, gambling may lead to low income as a result of consistent losing. In Britain, people in the lowest income categories are three times more likely to be classed a problem gambler than average (Sproston et al, 2000). Although many people on low incomes may not spend more on gambling, in absolute terms, than those on higher wages, they do spend a much greater proportion of their incomes than these groups. The links with general 'disadvantage' should also be noted. Research shows that those who experience unemployment, poor health, housing and low educational qualifications have significantly higher rates of problem gambling than the general population (Griffiths & Delfabbro, 2001; Griffiths, 2006).

The American Psychiatric Association (1994) claims that approximately one third of problem gamblers are women. In the USA this loosely corroborates the results of the BGPS that showed that approximately 1.3 per cent of men and 0.5 per cent of women in Britain could be classified as problem gamblers (Sposton et al, 2000). Results of the BGPS also showed that the prevalence of problem gambling decreased with age. For instance, the prevalence of problem gambling was 1.7 per cent among people aged between 16 and 24, but only 0.1 per cent among the oldest age group. Further, the prevalence was highest among men and women aged between 16 and 24 (2.3% and 1.1% respectively).

The types of games played also impact on the development of gambling problems. This has consequences for understanding the risk factors involved in the disorder, as well as the demographic profile of those individuals who are most susceptible. For instance, certain features of games are strongly associat-

ed with problem gambling. These include games that have a high event frequency (i.e., that are fast and allow for continual staking), that involve an element of skill or perceived skill, and that create 'near misses' (i.e., the illusion of having almost won) (Griffiths, 1999). Size of jackpot and stakes, probability of winning (or perceived probability of winning), and the possibility of using credit to play are also associated with higher levels of problematic play (Parke & Griffiths, 2006; in press). Games that meet these criteria include electronic gaming machines (EGMs) and casino table games.

According to the BGPS, the most problematic type of gambling in Britain is associated with games in a casino, (8.7% of people who gambled on this activity in the past year were problem gamblers according to the SOGS, and 5.6% according to the DSM-IV). Groups most likely to experience problems with casino-based gambling were single, unemployed males, aged under 30. Other subgroups include slightly older single males, aged over 40, often retired, who are also more likely to be of Chinese ethnicity (Fisher, 2000) and adolescent males who have problems particularly with fruit machines (Griffiths, 1995; 2002). The problem of adolescent gambling will be examined in more detail below.

The BGPS also indicated that other types of gambling activities were engaged in by problem gamblers. These included betting on events with a bookmaker (SOGS 8.1%; DSM-IV 5.8%), and betting on dog races (SOGS 7.2%; DSM-IV 3.7%). Problem gamblers were less likely to participate in the National Lottery Draw (1.2% of people who gambled on this activity in the past year were problem gamblers according to the SOGS; 0.7 according to the DSM-IV), or playing scratchcards (SOGS1.7%; DSM-IV 1.5%). In addition, problem gambling prevalence was associated with the number of gambling activities undertaken, with the prevalence of problem gambling tending to increase with the number of gambling activities participated in. As noted above, for a large number of people, the National Lottery Draw was the only gambling activity they engage in, and problem gambling prevalence among people who limit their gambling to activities such as the National Lottery and scratchcards was very low at 0.1 per cent. As might be expected, problem gambling was associated with higher expenditure on gambling activities.

Internationally, as in almost every other country worldwide, the greatest problems are, to a very considerable degree, associated with non-casino EGMs such as arcade 'fruit machines' (Griffiths, 1999; Parke & Griffiths, 2006). It has been found that as EGMs spread, they tend to displace almost every other type of gambling as well as the problems that are associated with them. EGMs are the fastest-growing sector of the gaming economy, currently accounting for some 70 per cent of revenue. Australia's particularly high rates of problem gambling are almost entirely accounted for by its high density of these non-casino machines. It is likely that Britain's relatively lower rates of problems associated with EGMs is explained by its current legislative environment, which limits the numbers of machines in what are relatively regulated venues. This situation

will change however, as the Gambling Act comes into force, allowing larger numbers of higher stakes machines into casinos, bingo halls and other gambling venues. All of this indicates that attention should be focused on EGMs as a source of risk.

The spread of EGMs also impacts on the demographic groups who experience problems with gambling. Until very recently, such problems were predominantly found in males, but as EGMs proliferate, women are increasingly presenting in greater numbers, so that in some countries (e.g. the USA), the numbers are almost equal. This trend has been described as a 'feminisation' of problem gambling (Volberg, 2001). These types of games appear to be particularly attractive to recent migrants, who are also at high risk of developing gambling problems. It has been suggested that first generation migrants may not be sufficiently socially, culturally or even financially adapted to their new environment to protect them from the potential risks of excessive gambling (Productivity Commission, 1999; Shaffer, LaBrie & LaPlante, 2004). Many are therefore vulnerable to the development of problems. This highlights the need for healthcare professionals to be aware of the specific groups – increasingly, women and new migrants, as well as young males and adolescents, who may present with gambling problems which may or may not be masked by other symptoms.

Variations in gambling preferences are thought to result from both differences in accessibility and motivation. Older people tend to choose activities that minimise the need for complex decision-making or concentration (e.g. bingo, slot machines), whereas gender differences have been attributed to a number of factors, including variations in sex-role socialisation, cultural differences and theories of motivation (Griffiths, 2006). Variations in motivation are also frequently observed among people who participate in the same gambling activity. For example, slot machine players may gamble to win money, for enjoyment and excitement, to socialise and to escape negative feelings (Griffiths, 1995). Some people gamble for one reason only, whereas others gamble for a variety of reasons. A further complexity is that people's motivations for gambling have a strong temporal dimension; that is, they do not remain stable over time. As people progress from social to regular and finally to excessive gambling, there are often significant changes in their reasons for gambling. Whereas a person might have initially gambled to obtain enjoyment, excitement and socialisation, the progression to problem gambling is almost always accompanied by an increased preoccupation with winning money and chasing losses.

Youth gambling

Adolescent gambling is a cause for concern in the UK and is related to other delinquent behaviours. For instance, in one study of over 4,500 adolescents, gambling was highly correlated with other potentially addictive activities such

as illicit drug taking and alcohol abuse (Griffiths & Sutherland, 1998). Another study by Yeoman and Griffiths (1996) demonstrated that around 4 per cent of all juvenile crime in one UK city was slot machine related based on over 1,850 arrests in a one-year period. It has also been noted that adolescents may be more susceptible to problem gambling than adults. For instance, in the UK, a number of studies have consistently highlighted a figure of up to 5 to 6 per cent of pathological gamblers among adolescent fruit machine gamblers (see Griffiths, [2002; 2003b] for an overview of these studies). This figure is at least two to three times higher than that identified in adult populations. On this evidence, young people are clearly more vulnerable to the negative consequences of gambling than adults.

A typical finding of many adolescent gambling studies has been that problem gambling appears to be a primarily male phenomenon. It also appears that adults may to some extent be fostering adolescent gambling. For example, a strong correlation has been found between adolescent gambling and parental gambling (Wood & Griffiths, 1998; 2004). This is particularly worrying because a number of studies have shown that individuals who gamble as adolescents, are then more likely to become problem gamblers as adults (Griffiths, 2003b). Similarly, many studies have indicated a strong link between adult problem gamblers and later problem gambling among their children (Griffiths, 2003b). Other factors that have been linked with adolescent problem gambling include working class youth culture, delinquency, alcohol and substance abuse, poor school performance, theft and truancy (e.g. Griffiths, 1995; Yeoman & Griffiths, 1996; Griffiths & Sutherland, 1998).

The main form of problem gambling among adolescents has been the playing of fruit machines. There is little doubt that fruit machines are potentially 'addictive' and there is now a large body of research worldwide supporting this. Most research on fruit machine gambling in youth has been undertaken in the UK where they are legally available to children of any age. The most recent wave of the UK tracking study carried out by MORI and the International Gaming Research Unit (2006) found that fruit machines were the most popular form of adolescent gambling with 54 per cent of their sample of 8,017 adolescent participants. A more thorough examination of the literature summarising over 30 UK studies (Griffiths, 2003b) indicates that:

- At least two-thirds of adolescents play fruit machines at some point during adolescence
- One-third of adolescents will have played fruit machines in the last month
- That 10% to 20 % of adolescents are regular fruit machine players (playing at least once a week) (17% in the latest 2006 MORI/IGRU survey)
- That between 3% and 6% of adolescents are probable pathological gamblers and/or have severe gambling-related difficulties (3.5% down from 4.9% in the latest 2006 MORI/IGRU survey).

All studies have reported that boys play on fruit machines more than girls and that as fruit machine playing becomes more regular it is more likely to be a predominantly male activity. Research has also indicated that very few female adolescents have gambling problems on fruit machines. Research suggests that irregular ('social') gamblers play for different reasons than the excessive ('pathological') gamblers. Social gamblers usually play for fun and entertainment (as a form of play), because their friends or parents do (i.e., it is a social activity), for the possibility of winning money, because it provides a challenge, because of ease of availability and there is little else to do, and/or for excitement (the 'buzz').

Pathological gamblers appear to play for other reasons such as mood modification and as a means of escape. As already highlighted, young males seem to be particularly susceptible to fruit machine addiction with a small but significant minority of adolescents in the UK experiencing problems with their fruit machine playing at any one time. Like other potentially addictive behaviours, fruit machine addiction causes the individual to engage in negative behaviours. This includes truanting in order to play the machines, stealing to fund machine playing, getting into trouble with teachers and/or parents over their machine playing, borrowing or the using of lunch money to play the machines, poor schoolwork, and in some cases aggressive behaviour (Griffiths, 2003b). These behaviours are not much different from those experienced by other types of adolescent problem gambling. In addition, fruit machine addicts also display bona fide signs of addiction including withdrawal effects, tolerance, mood modification, conflict and relapse.

It is clear that for some adolescents, gambling can cause many negative detrimental effects in their life. Education can be severely affected and they may have a criminal record as most problem gamblers have to resort to illegal behaviour to feed their addiction. Gambling is an adult activity and the government should consider legislation that restricts gambling to adults only.

Pathological features

Though many people engage in gambling as a form of recreation and enjoyment, or even as a means to gain an income, for some, gambling is associated with difficulties of varying severity and duration. Some regular gamblers persist in gambling even after repeated losses and develop significant, debilitating problems that typically result in harm to others close to them and in the wider community (Abbott & Volberg, 1999).

In 1980, pathological gambling was recognised as a mental disorder in the third edition of the Diagnostic and Statistical Manual (DSM-III) under the section 'Disorders of Impulse Control' along with other illnesses such as kleptomania and pyromania (American Psychiatric Association, 1980). Adopting a medical model of pathological gambling in this way displaced the old image

that the gambler was a sinner or a criminal. In diagnosing the pathological gambler, the DSM-III stated that the individual was chronically and progressively unable to resist impulses to gamble and that gambling compromised, disrupted or damaged family, personal, and vocational pursuits. The behaviour increased under times of stress and associated features included lying to obtain money, committing crimes (e.g. forgery, embezzlement or fraud), and concealment from others of the extent of the individual's gambling activities. In addition, the DSM-III stated that to be a pathological gambler, the gambling must not be due to antisocial personality disorder.

These criteria were criticised for (i) a middle class bias, i.e., the criminal offences like embezzlement, income tax evasion were 'middle class' offences, (ii) lack of recognition that many compulsive gamblers are self-employed and (iii) exclusion of individuals with antisocial personality disorder (Lesieur, 1988). Lesieur recommended the same custom be followed for pathological gamblers as for substance abusers and alcoholics in the past (i.e., allow for simultaneous diagnosis with no exclusions). The new criteria (DSM-III-R, American Psychiatric Association, 1987) were subsequently changed taking on board the criticisms and modelled extensively on substance abuse disorders due to the growing acceptance of gambling as a bona fide addictive behaviour. In 1989 however, Rosenthal conducted an analysis of the use of the DSM-III-R criteria by treatment professionals. It was reported that there was some dissatisfaction with the new criteria and that there was some preference for a compromise between the DSM-III and the DSM-III-R. As a consequence, the criteria were changed for DSM-IV.

The updated DSM-IV consists of 10 diagnostic criteria (see appendix 1). A 'problem gambler' is diagnosed when three or more of criteria A1-A10 are met, and a score of five or more indicates a 'probable pathological gambler.' The diagnosis is not made if the gambling behaviour is better accounted for by a manic episode (criterion B) (American Psychiatric Association, 1994). Problems with gambling may also occur in individuals with antisocial personality disorder and it is possible for an individual to be diagnosed with both pathological gambling and manic episode gambling behaviour if criteria for both disorders are met (American Psychiatric Association, 1994).

According to the American Psychiatric Association (1994) DSM IV "Pathological gambling typically begins in early adolescence in males and later in life in females. Although a few individuals are "hooked" with their very first bet, for most the course is more insidious. There may be years of social gambling followed by an abrupt onset that may be precipitated by greater exposure to gambling or by a stressor. The gambling pattern may be regular or episodic, and the course of the disorder is typically chronic. There is generally a progression in the frequency of gambling, the amount wagered, and the preoccupation with gambling and obtaining money with which to gamble. The urge to gamble and gambling activity generally increase during periods of stress or depression" (p.617).

SOGS is based on the DSM-III criteria for pathological gambling and is at present the most widely used screen instrument for problem gambling used internationally. It consists of 20 questions on gambling behaviour from which a total score (ranging from 0 to 20) of positive responses is calculated. A score of three to four indicates a 'problem gambler' and five or more indicates a 'probable pathological gambler' (see appendix 2).

Internet and remote gambling

A recent report published by the Department of Culture, Media and Sport (2006) noted that online gambling had more than doubled in the UK since 2001. Worldwide there are around 2,300 sites with a large number of these located in just a few particular countries. For instance, around 1000 sites are based in Antigua and Costa Rica alone. The UK has about 70 betting and lottery sites but as yet no gaming sites (e.g., online casinos featuring poker, blackjack, roulette, etc.). The findings reported that there were approximately one million regular online gamblers in Britain alone making up nearly one-third of Europe's 3.3 million regular online gamblers. It was also reported that women were becoming increasingly important in the remote gambling market. For instance, during the 2006 World Cup, it was estimated that about 30% of those visiting key UK based betting websites were women. The report also reported that Europe's regular online gamblers staked approximately £3.5 billion pounds a year at around an average of £1000 each. It was also predicted that mobile phone gambling was also likely to grow, further increasing accessibility to remote gambling.

The introduction of the internet and other remote gambling developments (such as mobile phone gambling, interactive television gambling) has the potential to lead to problematic gambling behaviour and is likely to be an issue over the next decade. Remote gambling presents what could be the biggest cultural shift in gambling and one of the biggest challenges concerning the psychosocial impact of gambling. To date, there has been little empirical research examining remote gambling in the UK. The one and only prevalence survey was published in 2001 (from data collected in 1999) when internet gambling was almost non-existent (Griffiths, 2001). Many gamblers however, are technologically proficient and use the internet and mobile phones regularly.

To date, knowledge and understanding of how the internet, mobile phones and interactive television affect gambling behaviour is sparse. Globally speaking, proliferation of internet access is still an emerging trend and it will take some time before the effects on gambling behaviour surface (on both adults and young people). However, there is strong foundation to speculate on the potential hazards of remote gambling. These include the use of virtual cash, unlimited accessibility, and the solitary nature of gambling on the internet as potential risk factors for problem gambling development (Griffiths & Parke, 2002; Griffiths, 2003c; 2005; Griffiths, Parke, Wood & Parke, 2005).

There is no conclusive evidence that internet gambling is associated with problem gambling although very recent studies using self-selected samples suggest that the prevalence of problem gambling among internet gamblers is relatively high (Griffiths & Barnes, 2005; Wood, Griffiths & Parke, in press). What is clear, however, is that online gambling has strong potential to facilitate, or even encourage, problematic gambling behaviour (Griffiths, 2003c). Firstly, the 24-hour availability of Internet gambling (and other remote forms) allows a person to potentially gamble non-stop (Griffiths, 1999). The privacy and anonymity offered by internet gambling enables problem gamblers to continue gambling without being 'checked' by gambling venue staff concerned about behaviour or amount of time spent gambling (Griffiths et al, 2005). Friends and family may also be oblivious to the amount of time an individual spends gambling online. In addition, the use of electronic cash may serve to distance a gambler from how much money he or she is spending, in a similar way that chips and tokens used in other gambling situations may allow a gambler to 'suspend judgement' with regard to money spent (Griffiths & Parke, 2002).

There are a number of factors that make online activities, such as internet gambling, potentially seductive and/or addictive including anonymity, convenience, escape, accessibility, event frequency, interactivity, short-term comfort, excitement and loss of inhibitions (Griffiths, 2003c; Griffiths et al, 2005). Further, there are many other specific developments that look likely to facilitate uptake of remote gambling services including (i) sophisticated gaming software, (ii) integrated e-cash systems (including multi-currency), (iii) multilingual sites, (iv) increased realism (e.g. 'real' gambling via webcams), (v) live remote wagering (for both gambling alone and gambling with others), and (vi) improving customer care systems (Griffiths, 2003c).

To a gambling addict, the internet could potentially be a very dangerous medium. For instance, it has been speculated that structural characteristics of the software itself might promote addictive tendencies. Structural characteristics promote interactivity and to some extent define alternative realities to the user and allow them feelings of anonymity - features that may be very psychologically rewarding to some individuals. There is no doubt that internet usage among the general population will continue to increase over the next few years. Despite evidence that both gambling and the internet can be potentially addictive, there is no evidence (to date) that internet gambling is 'doubly addictive' particularly as the internet appears to be just a medium to engage in the behaviour of choice. What the internet may do is facilitate social gamblers who use the internet (rather than Internet users per se) to gamble more excessively than they would have done offline (Griffiths, 2003c; Griffiths et al, 2005). In addition, a recent survey of British Internet gambling sites showed very low levels of social responsibility (Smeaton & Griffiths, 2004).

Technological advance in the form of remote gambling is providing 'convenience gambling'. Theoretically, people can gamble all day, every day of the year. This will have implications for the social impact of internet gambling.

There are a number of social issues concerning internet gambling. Some of the major concerns are briefly described below and adapted from Griffiths and Parke (2002).

Gate-keeping and protection of the vulnerable: There are many groups of vulnerable individuals (e.g. young people, problem gamblers, drug/alcohol abusers, the learning impaired) who in offline gambling would be prevented from gambling by responsible members of the gaming industry. Remote gambling operators however, provide little in the way of 'gatekeeping'. In cyberspace, how can you be sure that young people do not have access to internet gambling by using a parent's credit card? How can you be sure that a young person does not have access to internet gambling while they are under the influence of alcohol or other intoxicating substances? How can you prevent a young problem gambler who may have been barred from one internet gambling site, simply clicking to the next internet gambling link?

Electronic cash: For most gamblers, it is very likely that the psychological value of electronic cash (e-cash) will be less than 'real' cash (and similar to the use of chips or tokens in other gambling situations). Gambling with e-cash may lead to a 'suspension of judgment'. The 'suspension of judgment' refers to a structural characteristic that temporarily disrupts the gambler's financial value system and potentially stimulates further gambling. This is well known by both those in commerce (i.e., people typically spend more on credit and debit cards because it is easier to spend money using plastic) and by the gaming industry. This is the reason that 'chips' are used in casinos and why tokens are used on some slot machines. In essence, chips and tokens 'disguise' the money's true value (i.e., decrease the psychological value of the money to be gambled). Tokens and chips are often re-gambled without hesitation as the psychological value is much less than the real value.

Increased odds of winning in practice modes: One of the most common ways that gamblers can be facilitated to gamble online is when they try out games in the 'demo', 'practice' or 'free play' mode. Further, there are no restrictions preventing children and young people playing (and learning how to gamble) on these practice and demonstration modes. Recent research (Sevigny et al, 2005) showed that it was significantly more commonplace to win while 'gambling' on the first few goes on a 'demo' or 'free play' game. They also reported that it was commonplace for gamblers to have extended winning streaks during prolonged periods while playing in the 'demo' modes. Obviously, once gamblers start to play for real with real money, the odds of winning are considerably reduced. This has some serious implications for young people's potential gambling behaviour.

Online customer tracking: Perhaps the most worrying concerns over remote gambling is the way operators can collect other sorts of data about the gambler.

Remote gamblers can provide tracking data that can be used to compile customer profiles. When signing up for remote gambling services, players supply lots of information including name, address, telephone number, date of birth, and gender. Remote gambling service providers will know a player's favourite game and the amounts that they have wagered. Basically they can track the playing patterns of any gambler. They will know more about the gambler's playing behaviour than the gamblers themselves. They will be able to send the gambler offers and redemption vouchers, complimentary accounts, etc. The industry claims all of these things are introduced to enhance customer experience. More unscrupulous operators however, will be able to entice known problem gamblers back on to their premises with tailored freebies (such as the inducement of 'free' bets in the case of remote gambling).

Given the brief outline above, remote gambling could easily become a medium for problematic gambling behaviour. Even if numbers of problem remote gamblers are small (and they by no means necessarily are), remote gambling remains a matter of concern. Remote gambling is a relatively new phenomenon and is likely to continue expanding in the near future. It is therefore crucial that the new legislation does nothing to facilitate the creation or escalation of problems in relation to remote gambling. The recent decision by the US to ban internet gambling by making it illegal to pay with debit and credit cards is likely to drive the problem internet gambling "underground" and result in even less protection for vulnerable gamblers. New innovative ways of paying electronically for internet gambling will emerge and the prohibitive stance taken by the US is likely to have little long-lasting protective effect.

Consequences and co-morbidities

Problem gambling is often co-morbid with other behavioural and psychological disorders, which can exacerbate, or be exacerbated by, problem gambling. Some of the psychological difficulties a problem gambler may experience include anxiety, depression, guilt, suicidal ideation and actual suicide attempts (Daghestani et al, 1996; Griffiths, 2004). Problem gamblers may also suffer irrational distortions in their thinking (e.g. denial, superstitions, overconfidence, or a sense of power or control) (Griffiths, 1994a). Increased rates of attention-deficit hyperactivity disorder (ADHD), substance abuse or dependence, antisocial, narcissistic, and borderline personality disorders have also been reported in pathological gamblers (APA, 1994; Griffiths, 1994b). There is also some evidence that co-morbidities may differ among demographic subgroups and gambling types. For instance, young male slot machine gamblers are more likely to abuse solvents (Griffiths, 1994c).

There is frequently a link with alcohol or drugs as a way of coping with anxiety or depression caused by gambling problems, and, conversely, alcohol may trigger the desire to gamble (Griffiths, Parke & Wood, 2002). According to the

DSM IV, pathological gamblers tend to be highly competitive, energetic, restless, easily bored, and believe money is the cause of, and solution to, all their problems (see also Parke, Griffiths & Irwing, 2004). According to the American Psychiatric Association, pathological gamblers may also be overly concerned with the approval of others and may be extravagantly generous. Further, when not gambling, they may be workaholics or 'binge' workers who wait until they are up against deadlines before really working hard. Pathological gamblers may also be prone to stress-related physical illnesses including insomnia, hypertension, heart disease, stomach problems (e.g. peptic ulcer disease) and migraine (Daghestani et al, 1996; Abbot & Volberg, 2000; Griffiths, Scarfe & Bellringer, 2001; Griffiths, 2004). Like other addictive behaviours, while engaged in gambling, the body produces increased levels of endorphins (the body's own morphine like substance), and other 'feel good' chemicals like noradrenaline and seretonin (Griffiths, 2006). Many of these physical negative effects may stem from the body's own neuro-adaptation processes.

Health-related problems due to problem gambling can also result from withdrawal effects. Rosenthal and Lesieur (1992) found that at least 65 per cent of problem gamblers reported at least one physical side-effect during withdrawal including insomnia, headaches, upset stomach, loss of appetite, physical weakness, heart racing, muscle aches, breathing difficulty and/or chills. Their results were also compared to the withdrawal effects from a substance-dependent control group. They concluded that problem gamblers experienced more physical withdrawal effects when attempting to stop than the substance-dependent group.

Interpersonal problems suffered by problem gamblers include conflict with family, friends and colleagues, and breakdown of relationships, often culminating in separation or divorce (Griffiths, 2004, 2006). The children of problem gamblers also suffer a range of problems, and tend to do less well at school (Jacobs, Marston, Singer et al, 1989; Lesieur & Rothschild, 1989). School- and work-related problems include poor work performance, abuse of leave time and job loss (Griffiths, 2002). Financial consequences include reliance on family and friends, substantial debt, unpaid creditors and bankruptcy (Griffiths, 2006). Finally, there may be legal problems as a result of criminal behaviour undertaken to obtain money to gamble or pay gambling debts (Griffiths, 2005b; 2006). The families of problem gamblers can also experience substantial physical and psychological difficulties (Griffiths & Delfabbo, 2001; Griffiths, 2006).

High levels of substance misuse and some other mental disorders among problem gamblers highlight the importance of screening for gambling problems among participants in alcohol and drug treatment facilities, mental health centres and outpatient clinics, as well as probation services and prisons. Unfortunately, 'beyond programmes that provide specialised problem gambling services, few counselling professionals screen for gambling problems among their clients. Even when a gambling problem is identified, non-special-

ist professionals are often uncertain about the appropriate referrals to make or what treatments to recommend (Abbott et al, 2004). There is clearly a need for education and training in the diagnosis, appropriate referral and effective treatment of gambling problems.

Given the co-morbidity of alcoholism with gambling addiction, the recent introduction of 24-hour licensing may have an impact on the prevalence of gambling addiction. It is important that post-evaluative studies undertaken by the Department for Culture, Media and Sport (DCMS) to monitor the impact of the introduction of 24-hour licensing consider any potential impact this will have on levels of gambling addiction.

Structural characteristics in gambling

Gambling is a multifaceted rather than unitary phenomenon. Consequently, many factors may come into play in various ways and at different levels of analysis (e.g. biological, social or psychological). Theories may be complementary rather than mutually exclusive, which suggests that limitations of individual theories might be overcome through the combination of ideas from different perspectives. This has often been discussed in terms of recommendations for an 'eclectic' approach to gambling or a distinction between proximal and distal influences upon gambling (Walker, 1992). For the most part however, such discussions have been descriptive rather than analytical, and so far, few attempts have been made to explain why an adherence to a singular perspective is untenable. Put very simply, there are many different factors involved in how and why people develop gambling problems. Central to the latest thinking is that no single level of analysis is considered sufficient to explain either the aetiology or maintenance of gambling behaviour. Moreover, this view asserts that all research is context-bound and should be analysed from a combined, or biopsychosocial, perspective (Griffiths, 2005c). Variations in the motivations and characteristics of gamblers and in gambling activities themselves mean that findings obtained in one context are unlikely to be relevant or valid in another.

Another factor central to understanding gambling behaviour is the structure of gambling activities. Griffiths (1993; 1995; 1999) has shown that gambling activities vary considerably in their structural characteristics, such as the probability of winning, the amount of gambler involvement, the use of the near wins, the amount of skill that can be applied, the length of the interval between stake and outcome and the magnitude of potential winnings. Structural variations are also observed within certain classes of activities such as slot machines, where differences in reinforcement frequency, colours, sound effects and machines' features can influence the profitability and attractiveness of machines significantly (Griffiths & Parke, 2003; Parke & Griffiths, 2006; in press). Each of these structural features may (and almost certainly does) have implications for gamblers' motivations and the potential 'addictiveness' of gambling activities.

For example, skilful activities that offer players the opportunity to use complex systems, study the odds and apply skill and concentration appeal to many gamblers because their actions can influence the outcomes. Such characteristics attract people who enjoy a challenge when gambling. They may also contribute to excessive gambling if people overestimate the effectiveness of their gambling systems and strategies. Chantal and Vallerand (1996) have argued that people who gamble on these activities (e.g. racing punters) tend to be more intrinsically motivated than lottery gamblers in that they gamble for self-determination (i.e., to display their competence and to improve their performance).

People who gamble on chance activities, such as lotteries, usually do so for external reasons (i.e., to win money or escape from problems). This finding was confirmed by Loughnan, Pierce and Sagris (1997) in their clinical survey of problem gamblers. Here, racing punters emphasised the importance of skill and control considerably more than slot machine players. Although many slot machine players also overestimate the amount of skill involved in their gambling, other motivational factors (such as the desire to escape worries or to relax) tend to predominate. Thus, excessive gambling on slot machines may be more likely to result from people becoming conditioned to the tranquilising effect brought about by playing rather than just the pursuit of money.

Another vital structural characteristic of gambling is the continuity of the activity; namely, the length of the interval between stake and outcome. In nearly all studies, it has been found that continuous activities (e.g. racing, slot machines, casino games) with a more rapid play-rate are more likely to be associated with gambling problems (Griffiths, 1999). The ability to make repeated stakes in short time intervals increases the amount of money that can be lost and also increases the likelihood that gamblers will be unable to control spending. Such problems are rarely observed in non-continuous activities, such as weekly or bi-weekly lotteries, in which gambling is undertaken less frequently and where outcomes are often unknown for days. Consequently, it is important to recognise that the overall social and economic impact of expansion of the gambling industry will be considerably greater if the expanded activities are continuous rather than non-continuous.

Situational characteristics in gambling

Other factors central to understanding gambling behaviour are the situational characteristics of gambling activities. These are the factors that often facilitate and encourage people to gamble in the first place (Griffiths & Parke, 2003). Situational characteristics are primarily features of the environment (e.g., accessibility factors such as location of the gambling venue, the number of venues in a specified area, possible membership requirements, etc.) but can also include internal features of the venue itself (décor, heating, lighting, colour, background music, floor layout, refreshment facilities, etc.) or facilitating fac-

tors that may influence gambling in the first place (e.g., advertising, free travel and/or accommodation to the gambling venue, free bets or gambles on particular games, etc.) or influence continued gambling (e.g., the placing of a cash dispenser on the casino floor, free food and/or alcoholic drinks while gambling, etc.) (Griffiths & Parke, 2003; Abbott & Volberg, in press).

These variables may be important in both the initial decision to gamble and the maintenance of the behaviour. Although many of these situational characteristics are thought to influence vulnerable gamblers, there has been very little empirical research into these factors and more research is needed before any definitive conclusions can be made about the direct or indirect influence on gambling behaviour and whether vulnerable individuals are any more likely to be influenced by these particular types of marketing ploys. The introduction of super-casinos into the UK will almost certainly see an increase in these types of situational marketing strategies and should also provide an opportunity to research and monitor the potential psychosocial impact.

Impact of the Gambling Act 2005 on problem gambling

Although the BGPS found that Britain has a comparatively low rate of problem gambling (between 0.6% and 0.8% or 275,000 to 370,000 people; Sproston et al, 2000), this figure should be considered in the context of the (relatively) limited gambling opportunities available to the public at the time the survey was conducted in 1999. It has been predicted that the future expansion in gambling opportunities enabled by the Gambling Act 2005 (see appendix 5) can be expected to result in an increase in problem gambling in the UK (Griffiths, 2004). This is because the new legislation, due for full implementation in 2007, will significantly increase access to EGM's and other continuous gambling forms, including online gambling. Risk profiles are also likely to change, with disproportionate increases in problem gambling among women, ethnic and new migrant minorities. There is also concern about adolescent gambling although the latest national prevalence survey did show that adolescent problem gambling is on the decrease (currently 3.5% in 2006, down from 4.9% in 2000) (MORI/International Gaming Research Unit, 2006). Newer technologies however, like internet gambling may be more attractive to this sub-group. While research is starting to suggest that increases in problems may level out over time (Abbott & Volberg, in press), this appears to be part of a complex process involving, among other things, social adaptation, the implementation of public health policies and the provision of specialist treatment services. It also appears to be an uneven process that affects different groups of people in different ways.

The Gambling Act 2005 enhances opportunities to gamble in a multitude of ways, and research has shown that increasing the availability of particular forms of gambling can have a significant impact on the prevalence of problem gambling within a community (Griffiths, 1999; 2003a). It is important to

appreciate the differences between various forms of gambling and their link to problem gambling, as increasingly evidence suggests that some types of gambling are more strongly associated with gambling-related problems than others (see section on 'Profiling' above) (Abbott & Volberg, 1999).

Abbott (in press) has noted that in periods when new EGMs are being introduced or made highly accessible, substantial changes can occur over relatively short periods of time in the population sectors at highest risk for problem gambling. The RIGT notes that in that situation, existing services may need to change to be able to engage and work effectively with large numbers of different types of problem gambler. With disproportionate increases in problem gambling expected among women, youth, and ethnic and new migrant minorities, the development of targeted services and services that are culturally and demographically appropriate may be essential.

Abbott and Volberg (in press) have noted that raising public awareness of the risks of excessive gambling, expanding services for problem gamblers and strengthening regulatory, industry and public health harm reduction measures appear to counteract some adverse effects from increased availability. What is not known however, is how quickly such proactive mechanisms can have a significant impact and whether or not they can prevent problem gambling if they are introduced concurrently with increased access to 'harder' and more 'convenient' forms of gambling such as Internet gambling (Griffiths, Parke, Wood & Parke, 2005).

Where do we go from here? What can we do?

Although gambling is clearly of policy interest it has not been traditionally viewed as a public health matter (Griffiths, 1996; Korn, 2000). Furthermore, research into the health, social and economic impacts of gambling are still at an early stage. There are many specific reasons why gambling should be viewed as a public health and social policy issue - particularly given the massive expansion of gambling opportunities across the world. The following provides some recommendations to consider relating to policy initiatives.

Research: Understanding problem gambling is seriously hindered by a lack of high quality data, both internationally and especially in the UK. It is important to expand the research base on the causes, progression, distribution and treatment of gambling problems. One way to begin tackling the problem could be to link up with overseas networks and researchers in order to pool knowledge and expertise. The RIGT should also provide funding for major research programmes. Gambling as a health issue could also be included in other national surveys on health (such as the General Health Survey). In short there should be:

- Regular surveys of problem gambling services, including helplines and formal treatment providers, and evaluations of the effectiveness and efficacy of these services.

- Research into the efficacy of various approaches to the treatment of gambling addiction needs to be undertaken.
- Research into the association of Internet gambling and problem gambling.
- Research into the impacts of gambling, including health, family, workplace, financial and legal impacts.
- Longitudinal research into problem gambling, treatment, and the impact of gambling legislation on prevalence of problem gambling. In particular, why some people develop problems and, just as importantly, why the majority do not develop problems.

Legislation – Limit the opportunities and accessibility to gamble: There is little doubt that opportunities and accessibility to gamble will increase as a result of both the Gambling Act and opportunities for remote gambling. Underpinning this recommendation is psychological research into the 'availabilty hypothesis' (Orford, 2002). What has generally been demonstrated from research evidence in other countries is that where accessibility of gambling is increased there is an increase not only in the number of regular gamblers but also an increase in the number of problem gamblers (Griffiths, 1999) and supports the availability hypothesis. This obviously means that not everyone is susceptible to developing gambling addictions but it does mean that at a societal (rather than individual) level, the more gambling opportunities, the more problems. Therefore, number of outlets and opportunities could be capped (such as putting a cap on the size and number of casinos nationally). Particular psychological concern must be given to gambling in new media (e.g. Internet, interactive television, and mobile phone gambling) that may affect individuals in different ways.

Legislation – Raise the minimum age of all forms of commercial gambling to 18 years: A public-health approach to gambling-related harm adopts a broader conception of the causes of gambling-related problems. Traditional approaches tend to focus on the characteristics that pre-dispose some gamblers to develop problems, whereas a public health approach focuses on the characteristics of the environment that encourages excessive gambling (e.g., advertising, time restrictions etc.). The single most important measure would be to raise the legal age of gambling. This would significantly reduce the age at which children start to gamble and would also help gaming operators and shopkeepers prevent underage gambling. Research by psychologists has consistently shown that the younger a person starts to gamble, the more likely they are to develop problems (Griffiths, 2002). Furthermore, gambling, like other addictions involving alcohol and illicit drug use, are 'disorders of youthful onset' (Teeson, Degenhardt & Hall, 2002). At present, many young adolescents as young as 11 and 12 years of age can pass for being sixteen. An age rise to 18 years would stop a lot of the very young adolescents gambling in the first place. At the very least, there should be a review of slot machine gambling to

assess whether slot machine gambling should be restricted to those over 18 years of age.

Education – Raise awareness about gambling among health practitioners and the general public: There is an urgent need to enhance awareness within the medical and health professions, and the general public about gambling-related problems (Griffiths & Wood, 2000; Korn, 2000). The lack of popular and political support for policies that increase price or reduce availability has encouraged other approaches such as public education. Problem gambling is very much the "hidden" addiction. Unlike (say) alcoholism, there is no slurred speech and no stumbling into work. Furthermore, overt signs of problems often do not occur until late in the pathological gambler's career. When it is considered that problem gambling can be an addiction that can destroy families and have medical consequences, it becomes clear that health professionals and the public should be aware of the effects. General practitioners routinely ask patients about smoking and drinking but gambling is something that is not generally discussed (Setness, 1997). Problem gambling may be perceived as a somewhat "grey" area in the field of health and it is therefore is very easy to deny that health professionals should be playing a role. Those who work with problem gamblers have a clear role in educating both practitioners and the public about the psychosocial risks involved in excessive gambling. In short, health practitioners should;

- Be aware of the types of gambling and problem gambling, demographic and cultural differences, and the problems and common co-morbidities associated with problem gambling.
- Be provided with education and training in the diagnosis, appropriate referral and effective treatment of gambling problems must be addressed within GP training.
- Understand the importance of screening patients perceived to be at increased risk of gambling addiction.
- Be aware of the referral services available locally, and also support services.

Prevention: Set up both general and targeted gambling prevention initiatives: There has been little in the way of prevention and intervention initiatives in the UK and this is one area that psychologists can have a clear and direct role. According to Korn (2002), the goals of gambling intervention are to (i) prevent gambling-related problems, (ii) promote informed, balanced attitudes and choices, and (iii) protect vulnerable groups. The guiding principles for action on gambling are therefore prevention, health promotion, harm reduction, and personal and social responsibility.

Throughout the world there are many actions and initiatives that are carried out as preventative measures in relation to gambling. The most common examples of these include: general awareness raising (e.g., public education campaigns through advertisements on television, radio, newspapers); targeted

prevention (e.g., targeted education programs and campaigns for particular vulnerable populations such as senior citizens, adolescents, ethnic minorities etc.); awareness raising within gambling establishments (e.g., brochures and leaflets describing problem gambling, indicative warning signs, where help for problems can be sought etc.); training materials (e.g., training videos about problem gambling shown in schools, job centres etc.); training of gambling industry personnel (e.g., training managers of gambling establishments, and those who actually have interaction with gamblers such as croupiers); and Internet prevention (e.g., the development, maintenance and linking of problem gambling websites). Psychologists can be of direct help in all of these initiatives. Education and prevention programmes should also be targeted at children and adolescents along with other potentially addictive and harmful behaviours (e.g. smoking, drinking, and drug taking). More specifically, gambling operators and service providers should:

- Supply information on gambling addiction, treatment and services to patrons.
- Support development of centralised training for gambling venue staff to ensure uniform standards and accreditation.
- Pay at least £10 million per annum to fund research, prevention, intervention, and treatment programmes. This fund is administered by the Responsibility in Gambling Trust.

Treatment – Introduce gambling support and treatment initiatives: In addition to the preventative measures outlined above, there are many support initiatives that could also be introduced. These include:

- The running of problem gambling helplines as a referral service.
- The running of telephone counselling for problem gamblers and those close to them.
- The running of web-based chat rooms and online counselling for problem gamblers and those close to them.
- The funding of outpatient treatment.
- The funding of in-patient and residential treatment.
- Training for problem gambling counsellors (volunteers or professionals; face-to-face, telephone and/or online).
- Certification of problem gambling counsellors.

The intervention options for the treatment of problem gambling include1, but are not limited to: counselling, psychotherapy, cognitive-behavioural therapy (CBT), advisory services, residential care, pharmacotherapy, and/or combinations of these (i.e., multi-modal treatment) Griffiths, 1996; Griffiths & MacDonald, 1999; Griffiths & Delfabbro, 2001; Griffiths, Bellringer, Farrell-Roberts & Freestone, 2001; Hayer et al, 2005.

There is also a very recent move towards using the Internet as a route for guidance, counselling and treatment (see Griiffiths & Cooper, 2003; Griffiths, 2005d; Wood & Griffiths, 2007). Treatment and support is provided from a range of different people (with and without formal medical qualifications), including specialist addiction nurses, counsellors, medics, psychologists, and psychiatrists. There are also websites and helplines to access information (e.g., GamCare) or discuss gambling problems anonymously (e.g., GamAid), and local support groups where problem gamblers can meet other people with similar experiences (e.g. Gamblers Anonymous). Support is also available for friends and family members of problem gamblers (e.g., Gam Anon).

Many private and charitable organisations throughout the UK provide support and advice for people with gambling problems. Some focus exclusively on the help, counselling and treatment of gambling addiction (e.g., Gamblers Anonymous, GamCare, Gordon House Association), while others also work to address common addictive behaviours such as alcohol and drug abuse (e.g. Aquarius, Addiction Recovery Foundation, Connexions Direct, Priory). The method and style of treatment varies between providers and can range from comprehensive holistic approaches to the treatment of gambling addiction (e.g. encouraging fitness, nutrition, alternative therapies and religious counselling), to an abstinence-based approach.

Many providers also encourage patients (and sometimes friends and families) to join support groups (e.g., Gamblers Anonymous and Gam-Anon), while others offer confidential one-to-one counselling and advice (e.g., Connexions). Most are non-profit making charities to which patients can self-refer and receive free treatment. Independent providers that offer residential treatment to gambling addicts are more likely to charge for their services. Some provide both in-patient treatment and day-patient services (e.g. PROMIS), and a decision as to the suitability of a particular intervention is made upon admission.

Due to the lack of relevant evaluative research, the efficacy of various forms of treatment intervention is almost impossible to address. Much of the documentation collected by treatment agencies is incomplete or collected in ways that makes comparisons and assessments of efficacy difficult to make. As Abbott et al (2004) have noted, with such a weak knowledge base, little is known about which forms of treatment for problem gambling in the U.K. are most effective, how they might be improved or who might benefit from them. However, their review did note that individuals who seek help for gambling problems tend to be overwhelmingly male, aged between 18 to 45 years, and whose problems are primarily with on- and off-course betting, and slot machine use.

The gaming industry has typically viewed pathological gambling as a rare mental disorder that is predominantly physically and/or psychologically determined. It supports recent findings that suggest many problem gamblers have transient problems that often self-correct. Currently, gambling providers in the UK are not com-

pelled to supply patrons with help and advice about gambling problems, and have been reluctant to engage directly in interventions. Some gambling providers however, have taken the initiative to address the issue of gambling addiction within their businesses. Secondary prevention efforts by the gaming industry have included the development and implementation of employee training programmes, mandatory and voluntary exclusion programmes and gambling venue partnerships with practitioners and government agencies to provide information and improved access to formal treatment services (see appendix 4).

Implementation of secondary prevention efforts by the gaming industry, such as employee training programmes and exclusion programmes, have not always been of the highest quality and compliance has often been uneven. In addition, observations from abroad appear to demonstrate that efforts by the gaming industry to address gambling addiction tend to compete with heavily financed gaming industry advertising campaigns that may work directly to counteract their effectiveness (Griffiths, 2005e). Although advertising of gambling is very restricted at present, this is likely to be become much more liberal over the next decade. As a minimum:

- Information about gambling addiction services, in particular services in the local area, should be readily available to gamblers. Although some gambling services (such as GamCare and GamAid) provide information to problem gamblers about local services, such information is provided to problem gamblers who have already been proactive in seeking gambling help and/or information.
- Treatment for problem gambling should be provided under the NHS (either as stand alone services or alongside drug and alcohol addiction services) and funded either by the RIGT or other gambling-derived revenue. Such provision could follow the tiered system of treatment used for drug addiction, as outlined in the Department of Health Models of Care (2002) document. Both the Budd Commission and the review commissioned by the Responsibility in Gambling Trust (Abbott et al, 2004) recommended the adoption of a system of stepped care for the treatment of problem gambling.
- Expand provision of nationally dedicated problem gambling treatment, advice and counselling services both in and outside of the NHS. At present, such provision is sparse and unevenly distributed throughout the country. Wherever possible, information and treatment services should be sited close to gambling venues, as research suggests that increased proximity of the former to the latter increases the efficacy of support.
- Funding should be sought from the Department of Health for the development and evaluation of targeted services (such as for ethnic minorities, young people, women, and family members)

Social policy – Embed problem gambling in public health policy: It is clear that increased research into problem gambling is being taken seriously by

many countries across the world. This needs to be embedded into public health policy and practice (Shaffer and Korn, 2002). Such measures include:

- *Adoption of strategic goals* for gambling to provide a focus for public health action and accountability. These goals include preventing gambling-related problems among individuals and groups at risk for gambling addiction; promoting balanced and informed attitudes, behaviours, and policies toward gambling and gamblers by both individuals and communities; and protecting vulnerable groups from gambling-related harm.
- *Endorsement of public health principles* consisting of three primary principles that can guide and inform decision-making to reduce gambling-related problems. These are ensuring that prevention is a community priority, with the appropriate allocation of resources to primary, secondary and tertiary prevention initiatives; incorporating a mental health promotion approach that builds community capacity, incorporates a holistic view of mental health, and addresses the needs and aspirations of gamblers, individuals at risk of gambling problems, or those affected by them; and fostering personal and social responsibility for gambling policies and practices.
- *Adoption of harm reduction strategies* directed at minimizing the adverse health, social, and economic consequences of gambling behaviour for individuals, families, and communities. These initiatives should include healthy-gambling guidelines for the general public (similar to low-risk drinking guidelines); vehicles for the early identification of gambling problems; non-judgemental moderation and abstinence goals for problem gamblers, and surveillance and reporting systems to monitor trends in gambling-related participation and the incidence and burden of gambling-related illnesses.

References

Abbott MW (in press). Do EGMs and problem gambling go together like a horse and carriage? *Gambling Research,* in press.

Abbott MW & Volberg RA (1999). *Gambling and problem gambling in the community: an international overview and critique. report number one of the New Zealand gaming survey*. Wellington: Department of Internal Affairs.

Abbott, MW & Volberg RA (2000). *Taking the pulse on gambling and problem gambling in New Zealand: Phase One of the 1999 National Prevalence Survey. Report number three of the New Zealand Gaming Survey.* Wellington: Department of Internal Affairs.

Abbott M, Volberg R, Bellringer M & Reith G (2004) *A review of research on aspects of problem gambling.* Auckland University of Technology, Gambling Research Centre. London: Responsibility in Gambling Trust.

Abbott M & Volberg R (in press) Situational factors that affect gambling behaviour. In: Smith G, Hodgins D & Williams R (eds) *Research and measurement issues in gambling studies.* New York: Elsevier, in progress.

American Psychiatric Association (1980). *Diagnostic and statistical manual of mental disorders (3e)* Washington, DC.

American Psychiatric Association (1987) *Diagnostic and statistical manual of mental disorders (3e - revised)* Washington, DC.

American Psychiatric Association (1994) *Diagnostic and statistical manual of mental disorders (4th ed.).* Washington, DC.

Budd Report (2001) Government commissioned report on the gambling industry. www.culture.gov.uk/global/publications/archive_2001/gamb_rev_report.htm

Chantal Y & Vallerand RJ (1996) Skill versus luck: a motivational analysis of gambling involvement. *Journal of Gambling Studies* 12:407–18.

Creigh-Tyte S, & Lepper J, (2004) *Technical Paper No. 4: Gender difference in participation, and attitudes towards, gambling in the UK: Results from the 2004 NOP Survey*. London: DCMS.

Daghestani AN, Elenz E & Crayton JW (1996) Pathological gambling in hospitalised substance abusing veterans. *Journal of Clinical Psychiatry* 57:360-3.

Department of Culture, Media and Sport (2006). *A literature review and survey of statistical sources on remote gambling.* London: DCMS.

Griffiths MD (1993) Fruit machine gambling: The importance of structural characteristics. *Journal of Gambling Studies* 9:101–20.

Griffiths MD (1994a) The role of cognitive bias and skill in fruit machine gambling. *British Journal of Psychology* 85:351-69.
Griffiths MD (1994b) An exploratory study of gambling cross addictions. *Journal of Gambling Studies* 10:371-84.
Griffiths MD (1994c) Co-existent fruit machine addiction and solvent abuse in adolescence: A cause for concern? *Journal of Adolescence* 17:491-98.
Griffiths MD (1995) *Adolescent gambling.* London: Routledge.
Griffiths MD (1996) Pathological gambling and its treatment. *British Journal of Clinical Psychology* 35:477-79.
Griffiths MD (1999) Gambling technologies: Prospects for problem gambling. *Journal of Gambling Studies* 15:265-83.
Griffiths MD (2001a) Gambling – An emerging area of concern for health psychologists. *Journal of Health Psychology* 6:477-79.
Griffiths MD (2001b) Internet gambling: Preliminary results of the first UK prevalence study, *Journal of Gambling Issues* 5. Located at: http://www.camh.net/egambling/issue5/research/griffiths_article.html
Griffiths MD (2002a) *Gambling and gaming addictions in adolescence.* Leicester: British Psychological Society/Blackwells.
Griffiths MD (2002b) Internet gambling in the workplace. In: Anandarajan M & Simmers C (eds.). *Managing web usage in the workplace: A social, ethical and legal perspective*. Hershey, Pennsylvania: Idea Publishing.
Griffiths MD (2003a) Problem gambling. *The Psychologist: Bulletin of the British Psychological Society* 16:582-84.
Griffiths MD (2003b) Adolescent gambling: Risk factors and implications for prevention, intervention, and treatment. In: Romer D (ed.) *Reducing adolescent risk: Toward an integrated approach*. London: Sage.
Griffiths MD (2003c) Internet gambling: Issues, concerns and recommendations. *CyberPsychology and Behavior* 6:557-68.
Griffiths MD (2004). Betting your life on it. *British Medical Journal* 329:1055-6.
Griffiths MD (2005a) Remote gambling: Psychosocial aspects. In: *Remote Gambling* (Westminster eForum Seminar Series), pp.11-20. London: Westminster Forum Projects Ltd.
Griffiths MD (2005b) Gambling and crime in the workplace: Will it be a growing problem? *Justice of the Peace* 169:188-9.
Griffiths MD (2005c) A 'components' model of addiction within a biopsychosocial framework. *Journal of Substance Use* 10:191-197.
Griffiths MD (2005d) Online therapy for addictive behaviours. *CyberPsychology and Behavior* 8:555-61.
Griffiths MD (2005e) Does advertising of gambling increase gambling addiction? *International Journal of Mental Health and Addiction* 3:15-25.
Griffiths MD (2006) Pathological gambling. In: Plante T (ed) *Mental Disorders of the New Millennium (Volume 1: Behavioral Issues).* pp. 73-98. New York: Greenwood.
Griffiths MD & Barnes A (2005) Internet gambling: An online empirical study among gamblers. Paper presented at the 6th European Association for the Study of Gambling Conference, July Malmo, Sweden.
Griffiths MD, Bellringer P, Farrell-Roberts K et al (2001) Treating problem gamblers: A residential therapy approach. *Journal of Gambling Studies*, 17:161-9.
Griffiths MD & Cooper G (2003) Online therapy: Implications for problem gamblers and clinicians*, British Journal of Guidance and Counselling* 13:113-35.
Griffiths MD & Delfabbro P (2001) The biopsychosocial approach to gambling: Contextual factors in research and clinical interventions. *Journal of Gambling Issues* 5:1-33. Located at: http://www.camh.net/egambling/issue5/feature/index.html.
Griffiths MD & MacDonald HF (1999) Counselling in the treatment of pathological gambling: An overview. *British Journal of Guidance and Counselling* 27:179-90.
Griffiths MD & Parke J (2002) The social impact of internet gambling. *Social Science Computer Review*, 20:312-320.
Griffiths MD & Parke J (2003) The environmental psychology of gambling. In: Reith G (ed.) *Gambling: Who wins? Who loses?* New York: Prometheus Books
Griffiths MD, Parke J & Wood RTA (2002) Excessive gambling and substance abuse: Is there a relationship? *Journal of Substance Abuse* 7:187-90.
Griffiths MD, Parke A, Wood RTA & Parke J (2006) Internet gambling: An overview of psychosocial impacts. *Gaming Research and Review Journal*, in press.
Griffiths MD, Scarfe A & Bellringer P (1999) The UK National telephone Helpline - Results on the first year of operation. *Journal of Gambling Studies* 15:83-90.
Griffiths MD & Sutherland I (1998) Adolescent gambling and drug use. *Journal of Community and Applied Social Psychology* 8:423-7.
Korn D (2000). Expansion of gambling in canada : Implications for health and social policy. *Canadian Medical Association Journal*, 163(1): 61-64.
Korn D (2002, April). TeenNet Gambling Project. Paper presented at Discovery 2002 Conference, Responsible Gambling Council, Niagara Falls.
Hayer' T, Griffiths MD & Meyer G (2005) The prevention and treatment of problem gambling in adolescence. In: Gullotta TP & Adams G (eds) *Handbook of adolescent behavioural problems: Evidence-based approaches to prevention and treatment*. New York: Springer.
Jacobs DR, Marston AR, Singer AR et al (1989) Children of problem gamblers. *Journal of Gambling Behaviour* 5:261-7.
Lesieur H (1988) Altering the DSM-III Criteria for pathological gambling *Journal of Gambling Behaviour 4*:38-47.
Lesieur HR & Blume SB (1987) The South Oaks Gambling Screen (SOG): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry* 144:1184-8.
Lesieur HR & Rothschild (1989) Children of Gamblers Anonymous members. *Journal of Gambling Behaviour* 5:269-81.
Loughnan T, Pierce M & Sagris A (1997) *The Maroondah Assessment Profile for Problem Gambling (G-Map&trade): A new direction in problem gambling counseling.* Paper presented at the Tenth International Conference on Gambling and Risk-Taking, June Montreal, Canada.
MORI/International Gaming Research Unit (2006) *Under 16s and the National Lottery.* London: National Lottery Commission.
Orford J (2002). A nation of gamblers? *The Psychologist*, 15: 278-279.
Parke A, Griffiths MD & Irwing P (2004) Personality traits in pathological gambling: Sensation seeking, deferment of gratification and competitiveness as risk factors. *Addiction Research and Theory* 12:201-12.
Parke J & Griffiths MD (2006) The psychology of the fruit machine: The role of structural characteristics (revisited). *International Journal of Mental Health and Addiction* 4:151-79.
Parke J & Griffiths MD (in press) The role of structural characteristics in gambling. In: Smith G, Hodgins D & Williams R (eds.), *Research and Measurement Issues in Gambling Studies.* New York: Elsevier, in progress.
Rosenthal RJ (1989) *Compulsive gambling*. Paper presented at the California Society for the Treatment of Alcoholism and Other Drug Dependencies, November, San Diego.
Rosenthal RJ & Lesieur HR (1992) Self-reported withdrawal symptoms and pathological gambling. *American Journal of the Addictions* 1:150-4.
Setness, P.A. (1997). Pathological gambling: When do social issues become medical issues? *Postgraduate Medicine*, 102, 13-18.

Sproston K, Erens B & Orford J (2000) *Gambling Behaviour in Britain, Results from the British Gambling Prevalence Survey.* London: National Centre For Social Research.
Shaffer HJ, Hall MN & Vander Bilt J (1999) Estimating the prevalence of disordered gambling behaviour in the United States and Canada: A research synthesis. *American Journal of Public Health* 89:1369-76.
Shaffer HJ & Korn D (2002). Gambling and related mental disorders: A public health analysis. *Annual Review of Public Health*, 23: 171-212.
Shaffer HJ, LaBrie RA & LaPlante D (2004) Laying the foundation for quantifying regional exposure to social phenomena: considering the case of legalized gambling as a public health toxin. *Psychology of Addictive Behaviors* 18:40-8.
Smeaton M & Griffiths MD (2004) Internet gambling and social responsibility: An exploratory study, *CyberPsychology and Behavior* 7:49-57.
Teeson M, Degenhardt L & Hall W (2002). *Addictions.* New York: Taylor & Francis.
National Gambling Impact Study Commission (1999). *Final report*. Washington, DC: Government Printing Office. Available at http://govinfo.library.unt.edu/ngisc/index.html.
Volberg RA (1996) Prevalence studies of problem gambling in the United States. *Journal of Gambling Studies* 12:111-28.
Volberg RA (2001) *When the chips are down: Problem gambling in America*. New York, NY: The Century Foundation.
Walker MB (1992) *The Psychology of Gambling.* New York, NY: Permagon.
Wood RTA & Griffiths MD (1998) The acquisition, development and maintenance of lottery and scratchcard gambling in adolescence. *Journal of Adolescence* 21:265-73.
Wood RTA (2004) Adolescent lottery and scratchcard players: Do their attitudes influence their gambling behaviour? *Journal of Adolescence* 27:467-75.
Wood and Griffiths BJGC
Wood RTA, Griffiths MD & Parke J (in press) The acquisition, development, and maintenance of online poker playing in a student sample. *CyberPsychology and Behaviour*.
Yeoman T & Griffiths MD (1996) Adolescent machine gambling and crime. *Journal of Adolescence* 19:183-8.

Appendix 1

DSM-IV Diagnostic criteria for Pathological Gambling

A. Persistent and recurrent maladaptive gambling behaviour as indicated by five (or more) of the following:

1 is preoccupied with gambling (e.g. preoccupied with reliving past gambling experiences, handicapping or planning next venture, or thinking of ways to get money with which to gamble)
2 needs to gamble with increasing amounts of money in order to achieve the desired excitement
3 has repeated unsuccessful efforts to control, cut back, or stop gambling
4 is restless or irritable when trying to cut down or stop gambling
5 gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g. feelings of helplessness, guilt, anxiety, depression)
6 after losing money gambling, often returns another day to get even ('chasing' one's losses)
7 lies to family members, therapist, or others to conceal extent of involvement with gambling
8 has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
9 has jeopardised or lost a significant relationship, job, or educational or career opportunity because of gambling
10 relies on others to provide money to relieve a desperate financial situation caused by gambling.

B. The gambling behaviour is not better accounted for by a manic episode.

SOURCE: American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), 1994, pp615-6

Appendix 2

South Oaks Gambling Screen

1. Please indicate which of the following types of gambling you have done in your lifetime. For each type, mark one answer: 'not at all', 'less than once a week', or 'once a week or more'.

A: Not at all

B: Less than once a week

C: Once a week or more

A	B	C	
____	____	____	a. played cards for money
____	____	____	b. bet on horses, dogs or other animals (in off-track betting, at the track or with a bookie)
____	____	____	c. bet on sports (parley cards, with a book ie, or at jai alai)
____	____	____	d. played dice games (including craps, over and under, or other dice games) for money
____	____	____	e. went to casino (legal or otherwise)
____	____	____	f. played the numbers or bet on lotteries
____	____	____	g. played bingo
____	____	____	h. played the stock and/or commodities market
____	____	____	i. played slot machines, poker machines or other gambling machines
____	____	____	j. bowled, shot pool, played golf or played some other game of skill for money

2. What is the largest amount of money you have ever gambled with any one day?

____ never have gambled
____ more than $100 up to $1000
____ $10 or less
____ more than $1000 up to $10,000
____ more than $10 up to $100
____ more than $10,000

3. Do (did) your parents have a gambling problem?

____ both my father and mother gamble (or gambled) too much
____ my father gambles (or gambled) too much
____ my mother gambles (or gambled) too much
____ neither gambles (or gambled) too much

4. When you gamble, how often do you go back another day to win back money you lost?

____ never
____ some of the time (less than half the time) I lost
____ most of the time I lost
____ every time I lost

5. Have you ever claimed to be winning money gambling but weren't really? In fact, you lost?

___ never (or never gamble)
___ yes, less than half the time I lost
___ yes, most of the time

6. Do you feel you have ever had a problem with gambling?

___ no
___ yes, in the past, but not now
___ yes

	Yes	No
7. Did you ever gamble more than you intended?	____	____
8. Have people criticized your gambling?	____	____
9. Have you ever felt guilty about the way you gamble or what happens when you gamble?	____	____
10. Have you ever felt like you would like to stop gambling but didn't think you could?	____	____
11. Have you ever hidden betting slips, lottery tickets, gambling money, or other signs of gambling from your spouse, children, or other important people in you life?	____	____
12. Have you ever argued with people you like over how you handle money?	____	____
13. (If you answered 'yes' to question 12): Have money arguments ever centered on your gambling?	____	____
14. Have you ever borrowed from someone and not paid them back as a result of your gambling?	____	____
15. Have you ever lost time from work (or school) due to gambling?	____	____
16. If you borrowed money to gamble or to pay gambling debts, where did you borrow from? (Check 'yes' or 'no' for each)		
a. from household money	____	____
b. from your spouse	____	____
c. from other relatives or in-laws	____	____
d. from banks, loan companies or credit unions	____	____
e. from credit cards	____	____
f. from loan sharks (Shylocks)	____	____
g. your cashed in stocks, bonds or other securities	____	____
h. you sold personal or family property	____	____
ii. you borrowed on your checking account (passed bad checks)	____	____
jj. you have (had) a credit line with a bookie	____	____

k. you have (had) a credit line with a casino

_____ _____

Scores are determined by adding up the number of questions that show an 'at risk' response, indicated as follows. If you answer the questions above with one of the following answers, mark that the space next to that question:

Questions 1-3 are not counted.

___ Question 4: most of the time I lost, or every time I lost
___ Question 5: yes, less than half the time I lose, or yes, most of the time
___ Question 6: yes, in the past, but not now, or yes
___ Question 7: yes
___ Question 8: yes
___ Question 9: yes
___ Question 10: yes
___ Question 11: yes
Question 12 is not counted
___ Question 13: yes
___ Question 14: yes
___ Question 15: yes
___ Question 16a: yes
___ Question 16b: yes
___ Question 16c: yes
___ Question 16d: yes
___ Question 16e: yes
___ Question 16f: yes
___ Question 16g: yes
___ Question 16h: yes
___ Question 16i: yes
Questions 16j and 16k are not counted

Total = _____ (20 questions are counted)

**3 or 4 = potential pathological gambler (problem gambler)

**5 or more = probable pathological gambler