Internet Gambling, Health, Smoking and Alcohol Use: Findings from the 2007 British Gambling Prevalence Survey

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Abstract This study provides analysis of a representative national sample of Internet gamblers. Using participant data from the 2007 British Gambling Prevalence Survey ($n=$ 9003 adults aged 16 years and over), all participants who had gambled online, bet online, and/or who had used a betting exchange in the last 12 months (6% of the total sample) were compared with all other gamblers who had not gambled via the Internet (62% of the sample). Results showed that Internet gambling and non-Internet gambling had a significant association with smoking (nicotine) and drinking (alcohol). Self-reported general health status was not significantly associated with Internet gambling but was significantly associated with offline gambling. Analysis of DSM-IV scores showed that problem gambling prevalence rate was significantly higher among Internet gamblers than non-Internet gamblers (5% versus 0.5%) and that Internet gamblers were significantly more likely to endorse individual DSM-IV items compared to non-Internet gamblers.

Keywords Internet gambling · Online gambling · Gambling · Addiction · Alcohol use · Cigarette smoking · Health

Introduction

To date, there have been a relatively small number of empirical studies on Internet gambling. Furthermore, there have been a variety of different studies examining different

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aspects of Internet gambling. These have included national studies on adult Internet gambling (e.g., Griffiths 2001; Gambling Commission 2008; Griffiths et al. 2009b), national studies on adolescent Internet gambling (e.g., Griffiths and Wood 2007), regional studies of Internet gamblers (e.g., Ialomiteanu and Adlaf 2001; Wood and Williams 2007), studies on self-selected samples of Internet gamblers (e.g., International Gaming Research Unit 2007; Griffiths and Barnes 2008; Wood et al. 2007; Matthews et al. 2009), studies examining behavioural tracking data of Internet gamblers from online gaming sites (e.g., Broda et al. 2008; LaBrie et al. 2007; LaBrie et al. 2008), Internet gambling case studies (Griffiths and Parke 2007), studies examining very specific forms of gambling such as online poker (Wood et al. 2007; Wood and Griffiths 2008; Griffiths et al. 2009a), and studies examining internet gambling and social responsibility features (Smeaton and Griffiths 2004; Griffiths et al. 2009c).

To date, the largest self-report survey of Internet gamblers has been the study carried out by the International Gaming Research Unit (2007). A total of 10,865 Internet gamblers completed an online survey (58% male and 42% female). Respondents from 96 countries participated, and a broad range of occupations were represented. Problem gambling was not assessed. It was reported that the typical Internet casino player was likely to: be female (54.8%), be aged 46–55 years (29.5%), play 2–3 times per week (37%), have played for 2–3 years (22.4%), play for between 1–2 h per session (26.5%), and wager between $30–$60 (18.1%) per session. It was also reported that the typical Internet poker player was likely to: be male (73.8%), be aged 26–35 years (26.9%), play 2 to 3 times per week (26.8%), have played for 2 to 3 years (23.6%), and play for between 1 to 2 h per session (33.3%). Despite the size of the survey, it should be noted that the sample was not representative as they comprised people who filled out the online questionnaire (i.e., it was a self-selected sample).

There is no conclusive evidence that Internet gambling is more likely to cause problem gambling, although recent studies using self-selected samples suggest that the prevalence of problem gambling among student Internet gamblers is relatively high for students who gamble on the Internet in general (Griffiths and Barnes 2008; Matthews et al. 2009) and for those who engage in online poker (Wood et al. 2007). For instance, Wood et al. (2007) examined a self-selected sample of student online poker players using an online survey ($n=$ 422). Results showed that online poker playing was undertaken at least twice per week by a third of the participants. Almost one in five of the sample (18%) was defined as a problem gambler using the DSM-IV criteria. Findings demonstrated that problem gambling in this population was best predicted by negative mood states after playing, gender swapping whilst playing (i.e., men pretending to be a female when gambling online or women pretending to be a male, when gambling online), and playing to escape from problems. They also speculated that their data suggested a new type of problem gambler—one that wins more than they lose. Here, the negative detriments to the gamblers' lives are caused by the loss of time (e.g., gamblers playing online poker for 14 h a day and having little time for anything else in their lives).

Griffiths and Barnes (2008) examined some of the differences between Internet gamblers and non-Internet gamblers. It was hypothesised that (i) males would be significantly more likely to be Internet gamblers than females, (ii) Internet gamblers would be significantly more likely to be problem gamblers than non-Internet gamblers, and (iii) males would be significantly more likely to be problem Internet gamblers than females. A self-selected sample of 473 respondents (213 males; 260 females) aged between 18 and 52 years (mean age=22 years; SD=5.7 years) participated in an online survey. All three hypotheses were confirmed. Griffiths and Barnes suggested that the structural and situational characteristics

of Internet gambling may be having a negative psychosocial impact on Internet gambling. This is most notably because of increased number of gambling opportunities, convenience, 24-hour access and flexibility, increased event frequencies, smaller intervals between gambles, instant reinforcements, and the ability to forget gambling losses by gambling again immediately.

Given this relative lack of empirical research, the following study carried out some secondary analysis of the 2007 British Gambling Prevalence Survey (Wardle et al. 2007). More specifically the data were further examined to see whether:

- Particular demographic variables were significantly associated with Internet gambling.
- Cigarette smoking, alcohol usage and/or general health status was significantly associated with Internet and non-Internet gambling.
- The general demographic profile between Internet and non-Internet gamblers was significantly different.
- There was a relationship between Internet gambling and the number of activities gambled upon.

Method

Data analysed in this study came from the second British Gambling Prevalence Survey (BGPS) and were collected by the National Centre for Social Research (NatCen)[1] with the first and third authors as advisors. The method was similar to that used in the first national survey carried out in 1999/2000 (Sproston et al. 2000). Using the Postcode Address File as the sampling frame, private addresses were randomly selected within 317 postcode sectors stratified by region occupational status and proportion of non-white residents.

Fieldwork was carried out between September 2006 and March 2007 by NatCen's field force trained by NatCen researchers at 19 training sessions held across Britain. Following an advance letter, interviewers called at the selected addresses in order to complete a household interview with the 'household reference person' (HRP) or their spouse/partner (to collect socioeconomic information about the HRP and demographic information about each person resident in the household) and to assign a copy of the main self-completion questionnaire for each person aged 16 and over living in the household. Completed questionnaires were either collected at the same visit or on a later occasion. An online completion option was made available and was taken up by 7% of respondents. HRP interviews were achieved at 63% of addresses, and questionnaires were completed by 81% of adults at those addresses. Hence the overall response rate was 52% ($n=9,003$). Further details are provided in the full report of the survey (Wardle et al. 2007). Problem gambling was assessed using the DSM-IV criteria for pathological gambling (American Psychiatric Association 1994). The threshold used to identify 'problem gamblers' in the survey was that those who scored three or more of the criteria were defined as a 'problem gambler'.

It should also be noted that the authors of this paper have already reported some basic secondary analysis of Internet gambling using data from the BGPS (see Griffiths et al.

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[1] The National Centre for Social Research (NatCen) is the largest independent social research institute in Britain. It designs, carries out and analyses research studies in the fields of social and public policy. It employs over 100 research staff who work on a wide range of social policy areas, including health, crime, education, employment, travel, social attitudes and families. NatCen is a not-for-profit company that conducts social research on behalf of a range of public bodies, including central government departments and agencies, universities, research councils, and charitable trusts and foundations.

2009b). The preliminary secondary analysis of these data showed a number of significant socio-demographic differences. When compared to non-Internet gamblers, Internet gamblers were more likely to be male, relatively young adults, single, well educated, and in professional/managerial employment. Further analysis of DSM-IV scores showed that the problem gambling prevalence rate was significantly higher among Internet gamblers than non-Internet gamblers. Results suggest that the medium of the Internet may be more likely to contribute to problem gambling than gambling in offline environments. The analyses presented here examine different areas to those examined previously.

Internet gamblers were all those participants who reported gambling online, betting online and/or gambling using a betting exchange (6% of the total sample). All other survey participants were either those who gambled but not online (62% of the total sample), or those who did not gamble at all (32% of the total sample). It should also be noted that the prevalence of Internet gamblers in this study was likely to be lower than the true prevalence as those who used the Internet to play the National Lottery or one of its associated products were not included. Secondary analysis was carried out on those participants who gambled using the Internet and compared socio-demographic characteristics of this group against gamblers who did not gamble on the Internet[2] (i.e., non-gamblers were excluded from the analysis).

Survey data are typically characterized by two principal design features (i.e., unequal probability of selection requiring sample weights, and sampling within clusters). Both of these features were considered when presenting the 2007 survey results. Firstly, weighting was used to minimize response bias and ensure that the achieved sample was representative of the general population (living in private households). Secondly, results have been analyzed using the survey module in STATA (a statistical analysis package), which can account for the variability introduced through using a complex, clustered, survey design. The survey module in STATA is designed to handle clustered sample designs and account for sample-to-sample variability when estimating standard errors, confidence intervals and performing significance testing. All significance testing on the data to be reported used an adjusted *Wald's Test* to model the differences taking into account the complex sample design, weighting, and clustering. The *Wald Test* is a way of testing the significance of particular explanatory variables in a statistical model. In logistic regression we have a binary outcome variable and one or more explanatory variables. For each explanatory variable in the model there will be an associated parameter. The *Wald Test* (Polit 1996; Agresti 1990) provides a way of testing whether the parameters associated with a group of explanatory variables are zero.

Results

Ethnicity Results showed that the vast majority of Internet gamblers described themselves as White British (96%). The remainder described themselves as either Asian/Asian British (1%), Black/Black British (1%) or Other (2%). There were no significant differences in ethnicity between Internet gamblers and non-Internet gamblers.

Marital Status Results showed that prevalence of Internet gambling was highest among those who were single and lowest among those who were widowed. This was quite

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[2] This group of 'non-Internet gamblers' under an 'umbrella heading' is a very diverse group of people covering a wide range and the socio-demographics characteristics and activities.

different to the pattern observed for non-Internet gamblers, with prevalence being highest among those who were married or separated/divorced and lowest among those who were single. Marital status was significantly associated with Internet gambling (F (3,156)=15.30; $p<0.001$), and was highest among those who were single and lowest among those who were widowed. Marital status was also significantly associated with non-Internet gambling, and was highest among those who are separated/divorced and lowest among those who were single (F (3,156)=18.29; $p<0.001$).

Smoking Results showed that almost two-thirds of Internet gamblers (64%) and almost three-quarters of non-Internet gamblers (73%) were cigarette smokers. Smoking status was significantly associated with both past year Internet gambling (F (1,158)=27.87; $p<0.001$) and past year non-Internet gambling (F (1,158)=66.73; $p<0.001$). However, there was a significant difference between Internet gamblers and non-Internet gamblers with Internet gamblers being significantly less likely to smoke than non-Internet gamblers (F (1,158)=12.33; $p<0.001$).

Alcohol Intake Results showed that one in five Internet gamblers reported drinking more than four times their recommended maximum daily intake of alcohol on their heaviest drinking day. The prevalence of Internet gambling was highest among those that drank the most in the last week and increased as alcohol consumption increases (see Table 1). A different pattern was observed among non-Internet gamblers, with prevalence being highest among those who reported drinking more modestly. Further analysis showed that alcohol consumption was significantly associated with both Internet gambling (F (5, 154) 26.07; $p<0.001$) and non-Internet gambling (F (5, 154)=4.32; $p<0.01$). However, there was a significant difference between past year Internet gamblers and past year non-Internet gamblers with Internet gamblers being significantly more likely to drink more heavily than non-Internet gamblers (F (5, 154)=20.21; $p<0.001$).

General Health Status Results showed no difference between self-reported health status and gambling with approximately four-fifths of Internet gamblers and non-Internet

Table 1 Type of Gambling by Alcohol Consumption

All						
	Does not drink alcohol	Does drink alcohol, did not drink in last week	Drank less than 6 units (women) or 8 units (men) on heaviest drinking day	Drank between 6–12 units (women) or 8–16 units (men) on heaviest drinking day	Drank more than 12 unit (women) or 16 units (men) on heaviest drinking day	Total
	%	%	%	%	%	%
Internet gamblers	3	6	5	11	19	6
Non-Internet gamblers	51	64	66	71	66	62
Non-gamblers	46	30	30	19	15	32
Bases (weighted):	*2634*	*694*	*3918*	*1267*	*459*	*8972*
Bases (unweighted):	*2592*	*705*	*4025*	*1235*	*421*	*8978*

gamblers reporting that they were in good or very good health. Further analysis showed that general health status was not significantly associated with Internet gambling (F $(2,157)=0.35$; $p=0.70$) but was significantly associated with offline gambling (F $(2,157)=9.31$; $p<0.001$). However, there was no significant difference between Internet gamblers and non-Internet gamblers in general health profile (F $(2,157)=0.73$; $p=0.49$).[3]

Regression Analyses Further analysis aimed to produce a regression model. Past year gamblers were used as the base as it was important to differentiate between those who used the Internet to gamble and those who did not. If all participants were included in the base (including non-gamblers), there was the risk that the regression analysis would only pick up factors that were associated with gambling in general rather than purely focusing on the difference between Internet gamblers and non-Internet gamblers. The regression model was developed in two stages. Forward step-wise regression was used to identify potentially significant variables. The variable entered into this initial model were: age; gender; marital status; ethnic group; occupation type of household reference person; equivalised household income; educational qualifications; general health status; presence of a limiting long-standing illness; current smoking status; and alcohol consumption.

The significant variables were then entered into a final model (using the enter method). These were: age; gender; occupation type of household reference person; educational qualifications; general health status; presence of a limiting longstanding illness; current smoking status; and alcohol consumption.

Table 2 shows the variables that were significantly associated with using the Internet to gamble within the final model. The odds associated with the outcome variable are presented for each category of the independent variable. Odds are expressed relative to a reference category, which are given a value of 1. An odds ratio greater than 1 indicates higher odds of Internet gambling prevalence, and odds ratios less than 1 indicate lower odds. Also included are the 95% confidence intervals shown for each odds ratio. The regression model shows that the factors that most predict Internet gambling were being male and drinking at least twice the daily recommended intake of alcohol in one day. Odds of using the internet to gamble were 2.75 times higher among men than women and were 1.46 times higher for those who drank more than double their daily recommended intake of alcohol. Likewise, odds were 2.4 times higher among those who drank over four times their daily recommended intake of alcohol in one day than those who did not drink alcohol. Certain characteristics were also predictive of being less likely to use the internet to gamble. These were being aged 35 and over, having no educational qualifications, and being from a routine or manual household.

Problem Gambling Tables 3 and 4 highlight the differences between Internet gamblers and non-Internet gamblers on DSM-IV scores and on each of the DSM-IV criteria. Results showed that Internet gamblers were more likely to score positively on the DSM-IV than non-Internet gamblers. Further analysis of DSM-IV scores showed that problem gambling prevalence rate was significantly higher among Internet gamblers than non-Internet gamblers (F $(1,158)=52.09$; $p<0.001$) (see Table 3). Internet gamblers predictably endorsed each one of these items more than non-internet gamblers as they had higher DSM scores overall. It was also noted that some items on the DSM-IV were more heavily endorsed by Internet gamblers compared to non-Internet gamblers. Most notably this included preoccupation and gambling to escape (see Table 4).

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[3] The findings in this section may just be a function of sample size for offline gamblers being much larger. Therefore, these may not be real differences and could be an artefact of sample size.

Table 2 Odds of Using the Internet to Gamble

Past year gamblers

Socio-demographic characteristic

	Odds ratio	95% CI
Sex (*p<0.01*)		
Female	1	
Male	2.75	(2.26,3.35)
Age group (*p<0.01*)		
16–24	1	
25–34	1.03	(0.72, 1.47)
35–44	0.62	(0.43, 0.89)
45–54	0.37	(0.25, 0.56)
55–64	0.22	(0.13, 0.35)
65 and over	0.17	(0.10, 0.30)
Alcohol consumption in past week (*p<0.01*)		
Does not drink alcohol	1	
Does drink alcohol, but did not drink in last 7 days	1.52	(1.00, 2.32)
Drank less than 6 units (women) or 8 units (men) heaviest drinking day	1.07	(0.79, 1.44)
Drank between 6–12 units (women) or 8–14 units (men) heaviest drinking day	1.41	(1.03, 1.94)
Drank more than 12 units (women) or 14 units (men) on heaviest drinking day	2.40	(1.66, 3.49)
NS-SEC of household reference person (*p<0.01*)		
Managerial and professional occupations	1	
Intermediate occupations	0.80	(0.52, 1.24)
Small employers and own account workers	1.29	(0.91, 1.82)
Lower supervisory and technical occupations	0.57	(0.38, 0.86)
Semi-routine/ routine occupations	0.68	(0.49, 0.94)
Unknown	0.86	(0.51, 1.45)
Educational qualification (*p<0.05*)		
Degree or higher	1	
Professional, below degree	0.52	(0.31, 0.87)
A-levels	0.85	(0.60, 1.19)
GCSE/ O levels	0.80	(0.60, 1.07)
Other	0.49	(0.25, 0.96)
None	0.54	(0.37, 0.79)
Not answered	1.03	(0.49, 2.14)
Base (unweighted)	*6161*	

Discussion

This study provides further secondary analysis of a representative national sample of Internet gamblers. Overall, results including the regression analysis showed a number of significant socio-demographic differences between Internet gamblers and non-Internet gamblers. These results, combined with the results of the previous secondary analysis of some basic demographic factors (see Griffiths et al. 2009b) highlight that Internet gamblers

Table 3 DSM Score of Internet Gamblers vs. Non-Internet Gamblers by Number of Criteria

Past year gamblers

DSM score	Internet gamblers %	Non-Internet gamblers %
0	84.5	92.8
1	8.4	6.1
2	2.1	0.5
3	0.5	0.3
4	0.8	0.1
5	1.0	0.1
6	1.1	0.0
7	0.2	–
8	1.1	0.0
9	–	0.0
10	0.4	–
Score 3 or above:	5.0	0.5
Bases (weighted):	*518*	*5567*
Bases (unweighted):	*476*	*5685*

are more likely to be male, young, single, well educated, and in professional/managerial occupations. The finding that Internet gamblers are more likely to be single may be due to a number of reasons but is most likely to be explained by age. Given the finding that Internet gamblers are likely to be younger, it is also likely that the younger the person is, the less likely they are to be an established relationship. In addition to this, single people are likely to spend more time on a range of leisure activities (including gambling) as they are likely to

Table 4 Response to DSM-IV Items (Internet Gamblers vs. Non-Internet Gamblers)

Past year gamblers

DSM item	Internet gamblers %	Non-Internet gamblers %
Chasing losses	8.6	5.5
Preoccupation with gambling	9.3	1.2
Need to gamble with increasing amounts of money	3.2	0.4
Restless or irritable when tried to stop gambling	3.6	0.4
Gambling as escapism	4.7	0.4
Tried but failed to cut back or stop gambling	4.0	0.3
Lying to people to conceal gambling	3.1	0.4
Committed a crime to finance gambling	0.7	0.1
Risked a relationship because of gambling	2.3	0.2
Reliance on other to help in financial crisis caused by gambling	3.0	0.6
Bases (weighted):	*483*	*5065*
Bases (unweighted):	*450*	*5192*

have a greater amount of free time as they are not in an established relationship and/or have children.

Both Internet gambling and non-Internet gambling was shown to have a significant association with smoking (nicotine) and drinking (alcohol). Such links have been found in many studies including large British studies of both adolescent gamblers (e.g., Griffiths and Sutherland 1998; MORI/International Gaming Research Unit 2006) and adult gamblers (e.g., Sproston et al. 2000). Such findings indicate that behaviours such as gambling do not exist in a vacuum and that there are certain lifestyle behaviours that often co-occur and cluster. For instance, alcohol can be used as a way of coping with depression and/or anxiety caused by gambling problems, and, conversely, alcohol may trigger gambling desire (Griffiths et al. 2002). Petry et al. (2005) reported that just under two-thirds of problem gamblers had a nicotine dependence (60%), approximately three-quarters had an alcohol use disorder (73%), and that just over a third had a drug use disorder (38%).

These (and other) studies suggest psychological commonalities among susceptible and vulnerable individuals and perhaps provide evidence for personality commonalities, individuals being 'addiction prone' and/or general theories of addiction such as those outlined by Jacobs (1985). The concept of 'addictive personality' or being 'addiction prone' also suggests that some people will inevitably become dependent on drug taking or some other activity because of a personality fault. However, personality is complex and the role of personality in addiction is uncertain. It is difficult to disentangle the effects of personality on addiction from the effects of addiction on personality (Teeson et al. 2002).

Although smoking and drinking were significantly associated with both Internet gambling and non-Internet gambling, secondary analysis revealed there were significant differences between both the groups on these variables. Internet gamblers were significantly less likely to smoke cigarettes than non-Internet gamblers. Given that Internet gamblers tend to be better educated and working in professional and managerial environments (Griffiths et al. 2009a, b, c), there may be some better protective socio-demographic and environmental factors when compared to non-Internet gamblers. Given that these data were collected before the introduction a national smoking ban in Great Britain, it will be interesting to see what effect the no-smoking ban has on gambling participation. Such legislative measures may encourage gamblers who smoke to participate online at home as they can smoke legally at their leisure.

The findings also indicated that Internet gamblers were more likely to drink alcohol heavily over the preceding week when compared to non-Internet gamblers. One of the reasons for this may be the fact that if Internet gamblers are playing online at home they can also drink alcohol fairly cheaply compared to going out and drinking in (say) a casino. In essence, it is cost effective for Internet gamblers to drink at home and they do not have the added expense of peripheral extras such as travel costs. Furthermore, non-Internet gamblers may be prevented from drinking in some gambling environments (such as not being able to drink at the gaming tables in British casinos).

Problem gambling (as measured by the DSM-IV) was significantly more likely among Internet gamblers when compared to non-Internet gamblers. Many of these results confirm findings from smaller scale studies (e.g., Ladd and Petry 2002; Griffiths and Barnes 2008). It could perhaps be argued that the Internet provides a less protective environment for vulnerable gamblers than offline gambling environments. As has been pointed out in many papers over the last decade, to a problem gambler, the Internet provides the possibility for 24/7 gambling all year round from the comfort of one's own home. Given the low levels of social responsibility that have been found in empirical studies of Internet gambling sites (Smeaton and Griffiths 2004: Sevigny et al. 2005) this is of particular concern.

Despite the large sample size and good representation of the British population, there are a number of limitations of the data presented here. Perhaps, most importantly, is the self-report nature of the data. No validated measures (such as the General Health Questionnaire) were used to assess health, and all data relating to cigarette use and alcohol consumption were also self-report. Future studies would benefit from more accurate measures of health-related behaviour and/or corroboration from third party sources.

These findings suggest that online gaming companies need to provide a socially responsible infrastructure to minimize the harm to vulnerable and susceptible individuals. This could include social responsibility tools that use behavioural tracking software such as *PlayScan* (see Griffiths et al. 2009c). Furthermore, there is also the issue of how Internet problem gamblers can be helped. Recent research suggests that online problem gamblers may prefer to seek help online because they feel psychologically comfortable in these non-face-to-face, non-threatening, anonymous, and less stigmatizing environments (e.g., Griffiths and Cooper 2003; Wood and Griffiths 2008). In essence, the same factors that make the Internet an attractive place to gamble (e.g., convenience, disinhibition, availability, accessibility, anonymity) are likely the same factors that are attractive to those seeking help, guidance, and/or treatment online.

References

Agresti, A. (1990). *Categorical data analysis*. New York: Wiley.

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

Broda, A., LaPlante, D. A., Nelson, S. E., LaBrie, R. A., Bosworth, L. B., & Shaffer, H. J. (2008). Virtual harm reduction efforts for Internet gambling: effects of deposit limits on actual Internet sports gambling behaviour. *Harm Reduction Journal, 5*, 27.

Gambling Commission. (2008). *Survey data on remote gambling participation*. Birmingham: Gambling Commission.

Griffiths, M. D. (2001). Internet gambling: preliminary results of the first UK prevalence study, *Journal of Gambling Issues*, *5*. Retrieved 13 December 2008 from: http://www.camh.net/egambling/issue5/research/griffiths_article.html.

Griffiths, M. D., & Sutherland, I. (1998). Adolescent gambling and drug use. *Journal of Community and Applied Social Psychology, 8*, 423–427.

Griffiths, M. D., & Cooper, G. (2003). Online therapy: Implications for problem gamblers and clinicians. *British Journal of Guidance and Counselling, 13*, 113–135.

Griffiths, M. D., & Parke, J. (2007). Betting on the couch: a thematic analysis of Internet gambling using case studies. *Social Psychological Review, 9*(2), 29–36.

Griffiths, M. D., & Wood, R. T. A. (2007). Adolescent Internet gambling: preliminary results of a national survey. *Education and Health, 25*, 23–27.

Griffiths, M. D., & Barnes, A. (2008). Internet gambling: an online empirical study among student gamblers. *International Journal of Mental Health and Addiction, 6*, 194–204.

Griffiths, M. D., Parke, J., & Wood, R. T. A. (2002). Excessive gambling and substance abuse: is there a relationship? *Journal of Substance Use, 7*, 187–190.

Griffiths, M. D., Parke, J., Wood, R. T. A. & Rigbye, J. (2009a). Online poker gambling in university students: Further findings from an online survey. *International Journal of Mental Health and Addiction*. doi:10.1007/s11469-009-9203-7.

Griffiths, M. D., Wardle, J., Orford, J., Sproston, K., & Erens, B. (2009b). Socio-demographic correlates of internet gambling: findings from the 2007 British Gambling Prevalence Survey. *CyberPsychology and Behavior, 12*, 199–202.

Griffiths, M. D., Wood, R.T.A. & Parke, J. (2009c). Social responsibility tools in online gambling: A survey of attitudes and behaviour among Internet gamblers. *CyberPsychology and Behavior, 12*, 413–421.

Ialomiteanu, A., & Adlaf, E. (2001). Internet gambling among Ontario adults. *Electronic Journal of Gambling Issues*, 5, Retrieved 13 December 2008 from: http://www.camh.net/egambling/issue5/research/ialomiteanu_adlaf_articale.html.

International Gaming Research Unit (2007). *An exploratory investigation into the attitudes and behaviours of internet casino and poker players (Global Online Gambling Report)*. Report for e-Commerce and Online Gaming Regulation and Assurance.

Jacobs, D. F. (1985). A general theory of addictions: a new theoretical model. *Journal of Gambling Behavior, 1*, 15–31.

LaBrie, R. A., LaPlante, D. A., Nelson, S. E., Schumann, A., & Shaffer, H. J. (2007). Assessing the playing field: a prospective longitudinal study of internet sports gambling behavior. *Journal of Gambling Studies, 23*, 347–363.

LaBrie, R. A., Kaplan, S., LaPlante, D. A., Nelson, S. E., & Shaffer, H. J. (2008). Inside the virtual casino: A prospective longitudinal study of Internet casino gambling. *European Journal of Public Health,* doi:10.1093/eurpub/ckn021.

Ladd, G. T., & Petry, N. M. (2002). Disordered gambling among university-based medical and dental patients: a focus on internet gambling. *Psychology of Addictive Behaviours, 16*, 76–79.

Matthews, N., Farnsworth, W. F., & Griffiths, M. D. (2009). A pilot study of problem gambling among student online gamblers: Mood states as predictors of problematic behaviour. *CyberPsychology & Behavior*. doi:10.1089/cpb.2009.0050.

MORI/International Gaming Research Unit. (2006). *Under 16 s and the national lottery*. London: National Lottery Commission.

Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry, 66*, 564–574.

Polit, D. (1996). *Data analysis and statistics for nursing research*. Stamford, Connecticut: Appleton & Lange.

Sevigny, S., Cloutier, M., Pelletier, M., & Ladouceur, R. (2005). Internet gambling: misleading payout rates during the "demo" period. *Computers In Human Behavior, 21*, 153–158.

Smeaton, M., & Griffiths, M. D. (2004). Internet gambling and social responsibility: an exploratory study. *CyberPsychology and Behavior, 7*, 49–57.

Sproston, K., Erens, B., & Orford, J. (2000). *Gambling behaviour in britain, results from the British gambling prevalence survey*. London: National Centre for Social Research.

Teeson, M., Degenhardt, L., & Hall, W. (2002). *Addictions*. Hove: Psychology.

Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M. D., Constantine, R., et al. (2007). *The Briish gambling prevalence survey 2007*. London: The Stationery Office.

Wood, R. T. A., & Griffiths, M. D. (2008). Why Swedish people play online poker and factors that can increase or decrease trust in poker websites: a qualitative investigation. *Journal of Gambling Issues, 21*, 80–97.

Wood, R. T. A., & Williams, R. J. (2007). Problem gambling on the internet: implications for internet gambling policy in North America. *New Media & Society, 9*, 520–542.

Wood, R. T. A., Griffiths, M. D., & Parke, J. (2007). The acquisition, development, and maintenance of online poker playing in a student sample. *CyberPsychology and Behavior, 10*, 354–361.