

The psychosocial impact of online problem gambling

Abby McCormack

A thesis submitted in partial fulfilment of the requirements of Nottingham Trent
University for the degree of Doctorate of Psychology

This research programme was carried out in collaboration with the Responsible
Gambling Fund

September 2011

Contents

Tables	7
Figures	8
Copyright Statement	9
Acknowledgements	10
Abstract	11
Chapter 1: The psychology of gambling: A review of the literature	12
1.1 Background to gambling	12
1.2 Gambling participation	12
1.2.1 Gender differences	13
1.2.2 Socio-economic status.....	14
1.2.3 Adolescent gambling.....	14
1.2.4 Gambling in older adults.....	15
1.2.5 Summary of demographic factors	17
1.3 Pathological gambling	17
1.3.1 Definition	17
1.3.2 Diagnostic criteria	18
1.3.3 A continuum of problem gambling.....	19
1.3.4 Consequences of problem gambling.....	20
1.4 Risk factors for problem gambling	20
1.4.1 Family history of gambling.....	21
1.5 Comorbidity	22
1.5.1 Depression.....	22
1.5.2 Alcohol and drug-related problems.....	23
1.5.3 Crime.....	23
1.5.4 Suicide ideation.....	24
1.5.5 Gender differences in comorbidities	24
1.5.6 Summary of comorbidities.....	24
1.6 Theories of problem gambling behaviour	26
1.6.1 Cognitive-behavioural theories	26
1.6.1.1 Positive thinking	28
1.6.1.2 Gambler's fallacy	30
1.6.1.3 Locus of control	30
1.6.1.4 Illusion of control.....	32
1.6.1.5 Superstitious beliefs	32
1.6.1.6 'Near misses'	33
1.6.1.7 Chasing.....	34
1.6.2 Behavioural theories.....	35
1.6.3 Need state models	36
1.6.4 Personality theory.....	36
1.6.4.1 Sensation seeking	37
1.6.4.2 Impulsivity	39
1.6.4.3 Extraversion	40
1.6.4.4 Competitiveness	40
1.6.5 Biological theories	41
1.6.5.1 Twin studies	42
1.6.5.2 Neurochemical and genetic causes.....	42
1.6.6 Summary of the theories of problem gambling behaviour	43
1.7 Benefits of gambling	44

1.8 Structural and situational characteristics of gambling	46
1.8.1 Structural characteristics	47
1.8.1.1 Characteristics associated with problematic play	47
1.8.2 Situational characteristics.....	50
1.8.2.1 Advertising.....	50
1.8.2.2 Celebrity endorsement	51
1.8.2.3 Accessibility.....	52
1.8.3 Summary of the structural and situational characteristics of gambling	52
1.9 Summary and conclusions	52
Chapter 2: Interactive gambling technologies	55
2.1 Internet gambling	55
2.1.1 An overview of internet gambling	55
2.1.2 Prevalence of internet gambling.....	56
2.1.3 Rate of problem gambling among internet gamblers	58
2.1.4 Online poker.....	59
2.2 Social impact of internet gambling	60
2.2.1 Protection of the vulnerable	60
2.2.2 Additional impacts of internet gambling	61
2.3 Unscrupulous operators.....	62
2.4 Mobile phone gambling and interactive television gambling.....	63
2.5 Structural and situational characteristics of internet gambling technologies	64
2.5.1 Potentially addictive features of internet gambling	64
2.5.1.1 Accessibility and affordability	65
2.5.1.2 Anonymity	65
2.5.1.3 Convenience.....	65
2.5.1.4 Escape	66
2.5.1.5 Immersion/dissociation	66
2.5.1.6 Disinhibition.....	66
2.5.1.7 Event frequency	66
2.5.1.8 Interactivity	67
2.5.1.9 Simulation	67
2.5.1.10 Asociability	67
2.5.2 Summary of the structural and situational characteristics of internet gambling	67
2.6 Conclusions	68
2.7 Aims	69
Chapter 3: Methodology	71
3.1 Chapter overview	71
3.2 Differences between quantitative and qualitative research.....	71
3.3 Philosophical assumptions	72
3.4 ‘Mixed-methods’ research	73
3.4.1 Why use mixed methods research?	74
3.4.2 Conducting mixed methods research	75
3.4.3 Triangulation	77
3.5 Using the internet for research.....	77
3.6 An outline of the studies.....	79
3.6.1 Study 1 – scoping study	79
3.6.2 Study 2 – The qualitative study.....	80
3.6.2.1 In-depth semi-structured interviews.....	80
3.6.2.2 Method of analysis: Grounded theory.....	81
3.6.3 Study 3 – The online survey	83
3.6.3.1 Using the internet for surveys	84
3.7 Ethical Issues.....	87

3.7.1 Ethical Issues in Qualitative Research	87
3.7.2 Ethics of Internet Research	88
3.7.3 Ethical issues arising as a result of interviewing vulnerable problem gamblers	89
3.8 The Aims of the Mixed Method Approach	91
Chapter 4: A scoping study of the structural and situational characteristics of internet gambling	93
4.1 Introduction	93
4.2 Methodology.....	95
4.2.1 Design and materials	95
4.2.2 Procedure.....	96
4.3 Results.....	97
4.4 Structural characteristics of gambling	109
4.4.1 Online versus offline gambling: Structural characteristics that have a greater impact online.....	109
4.4.2 Online versus offline gambling: Structural characteristics that might have a greater impact online.....	113
4.4.3 Online versus offline gambling: Structural characteristics where the medium appears to make no difference.....	116
4.5 Internet-only structural characteristics	120
4.6 Situational characteristics	121
4.6.1 Online versus offline gambling: Situational characteristics that have a greater impact online.....	121
4.6.2 Online versus offline gambling: Situational characteristics that might have a greater impact online.....	123
4.6.3 Online versus offline gambling: Situational characteristics where the medium appears to make no difference.....	126
4.7 Discussion	128
4.7.1 Summary of the structural characteristics	129
4.7.2 Summary of the internet only structural characteristics.....	131
4.7.3 Summary of the situational characteristics	132
4.7.4 Limitations	134
4.7.5 Further research.....	134
4.7.6 Conclusions	135
Chapter 5: Motivating and inhibiting factors of engaging in online gambling behaviour: A grounded theory study.....	137
5.1 Introduction	137
5.2 Methodology.....	139
5.2.1 Design	139
5.2.2 Participants.....	140
5.2.3 Problem gambling diagnostic measures.....	143
5.2.4 Procedure.....	145
5.2.5 Analysis.....	146
5.3 Results.....	149
5.3.1 What are the motivating and inhibiting factors of internet gambling behaviour?	149
5.3.1.1 Greater opportunity to gamble	149
5.3.1.2 Convenience.....	150
5.3.1.3 Value for money.....	153
5.3.1.4 Greater online variety.....	156
5.3.1.5 A safe world	157
5.3.2 Reasons for not using the internet to gamble	158
5.3.2.1 Reduced authenticity of gambling online	159

5.3.2.2	Reduced realism	159
5.3.2.3	Internet is antisocial	161
5.3.2.4	Easier to spend more money online	162
5.3.2.5	Security of the websites	163
5.3.3	Differences between problem online gamblers and non-problem online gamblers	164
5.3.4	Differences between problem online gamblers and problem offline gamblers in terms of quality of life and well-being	165
5.3.4.1	Mental health problems	166
5.3.4.2	Physical health problems	167
5.3.4.3	Emotional health problems	168
5.3.4.4	Additional impacts on quality of life	169
5.3.4.5	Other differences between problem online and problem offline gamblers	173
5.3.5	What impact will the internet have on gambling behaviours?	175
5.3.5.1	The internet will exacerbate gambling problems in society	176
5.3.5.2	Enticement from gambling companies	177
5.3.6	Advertising	179
5.3.7	Gambling has become normalised	182
5.3.7.1	Increase in gambling participation	183
5.3.8	Internet gambling is more dangerous	184
5.4	Theoretical propositions	190
5.5	Discussion	192
5.5.1	Limitations	196
5.5.2	Conclusions	196
Chapter 6:	Online survey on internet gambling behaviour	197
6.1	Demographics of internet gamblers	197
6.1.1	Age	197
6.1.2	Gender	197
6.1.3	Disability	198
6.1.4	Childhood gambling	199
6.1.5	Other factors	199
6.2	Structural and situational characteristics	200
6.2.1	Skill games versus games of chance	200
6.2.2	Multiple game playing	201
6.2.3	Electronic payment	201
6.2.4	'Fast' games	202
6.2.5	Near misses	202
6.2.6	Chasing	203
6.3	Attitudes towards gambling	203
6.4	What do we know about remote gambling?	204
6.4.1	Mobile phone gambling and interactive television gambling	204
6.4.2	Why do people gamble online?	205
6.4.3	Aims	206
6.5	Methodology	207
6.5.1	Participants	207
6.5.2	Development of the survey	207
6.5.2.1	Attitudes towards gambling	208
6.5.2.2	Monetary spending on gambling	208
6.5.3	Measures	209
6.5.3.1	Demographic information questions	209
6.5.3.2	Online gambling behaviour	210

6.5.3.3 Motivations for gambling online.....	210
6.5.3.4 Experience of gambling online	211
6.5.3.5 Features of online gambling.....	211
6.5.3.6 Problem gambling screen.....	212
6.5.3.7 Additional questions	213
6.5.4 Procedure.....	213
6.5.5 Analysis.....	214
6.6 Results.....	214
6.6.1 Demographics	214
6.6.2 Disability.....	216
6.6.3 Problem gambling	216
6.6.4 Playing behaviour.....	216
6.6.4.1 Number of years gambling.....	216
6.6.4.2 Age first gambled on the internet.....	217
6.6.4.3 Length of gambling session	217
6.6.5 What brings a gambling session to an end?	218
6.6.6 Chasing and near miss.....	220
6.6.7 Where do people participate in online gambling?.....	220
6.6.8 Who do people participate in online gambling with?	221
6.6.9 Expenditure	221
6.6.10 Gambling activity.....	221
6.6.11 Experience of gambling	223
6.6.11.1 What emotions were felt when gambling online?.....	223
6.6.11.2 Reasons for gambling online.....	225
6.6.11.3 Age first gambled online and reasons for gambling online	228
6.6.11.4 Choosing a gambling website	228
6.6.11.5 Age first gambled online and choosing a website.....	230
6.6.12 The impact of structural characteristics on internet gambling behaviour	230
6.6.12.1 Communicating online	230
6.6.12.2 Gender swapping and lying about age	231
6.6.12.3 Multi-gambling, practice games and autoplay features	231
6.6.12.4 Easy games and Skill games	232
6.6.13 Opinions and perceptions of online gambling	232
6.6.13.1 Age first gambled online and attitude	236
6.6.13.2 Internet gambling is more addictive.....	236
6.6.13.3 Internet gambling is safe	237
6.6.14 Disadvantages of online gambling	238
6.6.14.1 Number of years gambling online and perception of the disadvantages of online gambling.....	240
6.6.14.2 Age first gambled online and opinions on the drawbacks of online gambling.....	241
6.6.14.3 Disadvantage: ‘online gambling is not as real as offline gambling’	241
6.6.15 Differences between those that participate in different gambling activities ..	241
6.6.15.1 Online gambling activity and level of problem.....	241
6.6.15.2 Age first gambled online and activity participate in ‘most days’	243
6.6.15.3 Online gambling activity and sex.....	243
6.6.15.4 Gender swapping.....	244
6.6.15.5 Easy games and skill-based games	245
6.6.16 Reasons for gambling online among regular and non-regular gamblers	245
6.6.17 Attitudes towards gambling among regular and non-regular gamblers	248
6.6.18 Other remote forms of gambling.....	250
6.6.19 Drinking alcohol and smoking	250

6.6.20 Treatment	251
6.6.21 Characteristics of online problem gamblers: Binary Logistic Regression.....	252
6.7 Discussion	254
6.7.1 Demographics	254
6.7.2 Disability	255
6.7.3 Motivations for gambling online.....	256
6.7.4 Emotional play	257
6.7.5 Disadvantages of gambling online	258
6.7.6 Skill versus chance games.....	258
6.7.7 Number of gambling activities.....	259
6.7.8 Attitudes	259
6.7.9 Underage gambling	260
6.7.10 Multi game playing	261
6.7.11 Treatment	262
6.7.12 Limitations	262
6.8 Conclusions	263
Chapter 7: Conclusion	265
7.1 Policy recommendations	271
7.2 Final remarks.....	275
References	277
Appendix 1: List of Internet gambling websites visited (n = 70).....	316
Appendix 2: Operational definition of the structural and situational characteristics	318
Appendix 3: List of open codes (higher level categories and lower level codes)	322
Appendix 4: Online survey	327
Appendix 5: List of internet gambling websites where the survey was posted..	337

Tables

Table 1: DSM-IV criteria for pathological gambling (APA, 1994).....	18
Table 2: Types of positive thinking experienced by gamblers	28
Table 3: Combining Qualitative and Quantitative Methods	76
Table 4: The structural and situational characteristics of gambling and the level of impact on Internet gambling	97
Table 5: Basic demographic details of study participants (n = 40).....	141
Table 6: Demographic characteristics of online gamblers.....	215
Table 7: Reasons for ending a gambling session, by problem gambling status and sex	219
Table 8: Frequency of activities engaged in online and offline	222
Table 9: Emotions experienced when gambling online, by problem gambling status and sex	224
Table 10: Reasons for gambling online, by gambling severity and sex.....	226
Table 11: Reasons for choosing a website, by age and sex	229
Table 12: Attitudes, by problem gambling status and sex.	234
Table 13: Disadvantages of online gambling, by problem gambling status and sex	239
Table 14: Reasons for gambling online, by regular and non regular poker players, sports betters and horse-race betters.	246
Table 15: Attitudes, by regular and non-regular poker players, sports betters, and horse-race betters	249
Table 16: Seeking help for a gambling problem (n=726).....	251

Table 17: Knowing someone else with a gambling problem among problem gamblers and non-problem gamblers (n=796, d.f=1).	251
Table 18: Predictors of problem online gambling behaviour.....	253

Figures

Figure 1: Motivating factors for engaging in online gambling	150
Figure 2: Inhibiting factors of engaging in online gambling behaviour	159
Figure 3: What impact will the internet have on gambling behaviours?	176
Figure 4 Motivating and inhibiting factors of engaging in online gambling among current gamblers.....	191

Copyright Statement

This work is the intellectual property of the author. You may copy up to 5% of this work for private study, or personal, non-commercial research. Any re-use of the information contained within this document should be fully referenced, quoting the author, title, university, degree level and pagination. Queries or requests for any other use, or if a more substantial copy is required, should be directed in the owner of the Intellectual Property Rights.

Acknowledgements

I would like to thank my Director of Studies Professor Mark Griffiths, for being an excellent supervisor, and more than I could have hoped for from a supervisor. I am particularly grateful for his unfailing support and the encouragement he has given me to attend international conferences and publish my work. Substantial thanks are also due to Dr Gillian Smith for all her support with statistics, and thanks go to my second supervisor, Dr Andy Grayson for his support with the methodology.

I would also like to take this opportunity to express my gratitude to the technical support staff that made this research possible. In particular, I would like to thank Ben Thompson and Ben Sigsworth for all their help.

I would also like to thank my parents, Barry and Anna, without whom, none of this would have ever been possible. Their unwavering support and tolerance throughout this journey will never be forgotten.

I would also like to thank my peers who have been completing a PhD. The support and encouragement we have given each other along the way has been invaluable.

Finally, I would like to thank a wide number of people who have made this process more fun than I dared to believe possible. So, my thanks pass to all of those who reminded me that I had a life outside of my work and helped to make it all that it has been.

Abstract

Ever since the National Lottery was introduced in 1994, there has been an increased prevalence of gambling in the UK. Technological innovation in this time has led to new ways in which people can gamble worldwide (e.g., internet gambling, mobile phone gambling and interactive television gambling), and increased accessibility to opportunities to gamble worldwide. The fastest growing form of gambling is internet gambling, however, little is understood in relation to the characteristics of internet gamblers, the psychosocial impact of internet gambling (e.g. problem gambling) and implications for public social policy.

The overall aims of this thesis were to establish (i) what makes internet gambling potentially addictive, (ii) how is internet gambling located, accessed, and utilised by players, and (iii) what the salient structural and situational characteristics of internet gambling are and how these impacted (psychologically and socially) on peoples' lives. These aims were addressed through three stages of linked research utilising a multi-method design including a literature-based scoping study, in-depth interviews (n=40), and a comprehensive online survey (n=975) in order to triangulate the data to examine the psychosocial impact and potential addictiveness of internet gambling.

The principal findings of this thesis noted certain structural characteristics have significantly more impact online than offline, and therefore the design of gambling websites can potentially manipulate gambling behaviour, thus making internet gambling potentially addictive. Gamblers were motivated to gamble online for the convenience, value for money, the greater variety of games, and anonymity. Inhibiting factors of online gambling included the reduced realism, the asocial nature of the internet, the use of electronic money, and concerns about the safety of online gambling websites. Predictors of online problem gambling were identified and included being male; having a disability; continued gambling after experiencing a near miss, lying about their age, engaging in two or more activities regularly, agreeing that internet gambling is more addictive than offline gambling.

Chapter 1: The psychology of gambling: A review of the literature

1.1 Background to gambling

Gambling is a social activity that has been engaged in throughout history, across cultures and incorporates a variety of activities in different settings. It usually refers to wagering money or something of financial value on the outcome of a game with the intent of winning additional money or something of financial value. Some activities involve the use of skill and knowledge, for example poker, horse racing and sports betting and can give a person an advantage over other gamblers. Other activities are completely random and unpredictable such as bingo and lotteries.

Social gambling typically occurs with friends or colleagues and lasts for a limited period of time, with predetermined acceptable losses (Griffiths, 2007a). For most individuals gambling is enjoyed in moderation. However, for a small but significant minority, gambling can have serious consequences, such as legal, financial, vocational and interpersonal difficulties and can be associated with psychiatric comorbidities (Crockford & el-Guebaly, 1998).

1.2 Gambling participation

In Britain, approximately 70% of adults said they participated in some form of gambling in the past 12 months (Wardle, *et al.*, 2007) with The National Lottery Draw the most popular activity (57% of adults). Survey data on gambling participation in 2009 in the UK found that 55.2% had participated in at least one form of gambling in the past month (Gambling Commission, 2010), again with The National Lottery Draw the most popular activity (45.7%) followed by other lotteries (10.9%), National Lottery scratchcards (10.8%), betting on horse races (3.4%), fruit machine gambling (3.3%) and betting privately with friends (3.3%). The British Gambling Prevalence Survey carried out in 2007 (Wardle, *et al.*, 2007) also found that in the past 12 months, 26% participated in only one activity, 28% participated in two or three activities, 9% in four or five activities, and 5% in six or more activities. Secondary data analysis of the British Gambling Prevalence Survey (LaPlante, Nelson, LaBrie & Shaffer, 2009) suggests that gambling involvement is an important predictor of disordered gambling status, with those participating in more activities, more likely to be a problem gambler.

In terms of frequency of gambling, football pools and buying National Lottery tickets were participated in most frequently with over half participating in these activities at least once a week (55%), while 34% played bingo once a week. The next activities played most frequently were online gambling and betting exchanges (both 29%). The majority of activities were mostly likely to be done less than monthly, these included horse and dog races (82% and 80% respectively), playing table games in a casino (81%), private betting (67%), slot machines (65%), and spread betting (64%).

Using data from population based surveys in Canada between 2001 and 2005, Holtgraves (2009a) examined the similarities and differences between gambling activities looking at gambling frequency and rates of problem gambling. He found two clear categories of gambling. One comprised internet gambling, sports gambling and horse races (predominantly male), while the other comprised lottery, bingo, slots/video lottery terminals (VLTs) and raffles (predominantly female). Greater frequency of play was significantly related to problem gambling scores for all activities except raffles, and was particularly pronounced for slot machines and VLTs. Additionally problem gambling scores were associated with playing a larger number of games.

1.2.1 Gender differences

Gambling has traditionally been seen as predominately a male activity, but prevalence surveys have shown high proportions of women gamble (Abbott, Volberg & Ronnberg, 2004; Wardle *et al.*, 2007). However, there may be differences in reasons for gambling. Males may be more likely to gamble for excitement or thrill seeking, while for women, gambling may be related to modulation of adverse moods (Grant & Kim 2002; Ladd & Petry 2002a; Potenza, *et al.*, 2001). Women are also more likely to start gambling at an older age than men, and typically have a faster progression to pathological gambling than men (Wenzel & Dahl, 2008). Differences in reasons for gambling between males and females may reflect differential comorbidities between sexes, which in turn may be important for understanding etiology and treatment (Petry, Stinson & Grant, 2005). There are also differences in the activities people gamble on between males and females.

Males prefer sports betting, animal racing or strategic games like blackjack and poker, while females prefer non strategic games like slot machines, bingo or lottery activities (Ladd & Petry, 2002a; Potenza, *et al.*, 2001; Wenzel & Dahl, 2008). In the UK, with the exception of bingo (Grant & Kim, 2002), men are more likely than women to gamble

(71% men, 65% women) and to participate in a greater number of gambling activities (1.9 per year and 1.3 per year respectively) (Wardle *et al.*, 2007). LaPlante, Nelson, LaBrie and Shaffer (2006) looked at data from 2256 problem gambling treatment participants to examine the influence of gender on play patterns. The results suggest that personal demographic, economic, and health-related profiles provide essential distinguishing information for gamblers who prefer specific games. LaPlante *et al.* (2006) suggest that for understanding gambling patterns, gender is less informative than descriptive profiles. Developing a better understanding of the nature of supposed gender differences by creating gambling profiles based on demographic, economic, and health-related factors might help to better explain individuals preferences for certain games (LaPlante *et al.*, 2006).

1.2.2 Socio-economic status

Although gambling is a popular activity among people from all social classes, gambling has been more popular in lower socio-economic groups (Blaszczynski, Steel & McConaghy, 1997) and the type of gambling activity people participate in varies by social class. In terms of education, respondents with higher levels were less likely to gamble – 61% of those with a degree compared with 73% who were educated to GCSE/O level equivalent (Wardle *et al.*, 2007). However, the British Gambling Prevalence Survey (Wardle *et al.*, 2007) also found that people in higher income households were more likely to gamble – the rate increased from 61% among those in the lowest income households, to 72% for highest income households. Welte, Barnes, Wieczorek, Tidwell, and Parker (2004) found that minority and low socioeconomic status (SES) group members have higher levels of gambling pathology than other groups. Poverty is often associated with increased financial risk-taking. Shaffer and Korn (2002) suggest that people living in poverty perceive greater potential to change their lives from a gambling win than people living in wealth, and people with wealth perceive little opportunity to change their lives from a gambling win. However, Petry *et al.* (2005) did not find an association between income and education and pathological gambling.

1.2.3 Adolescent gambling

Adolescent gambling is a major problem in the UK and is related to high levels of problem gambling and other delinquent behaviours such as drug and alcohol abuse (Griffiths & Sutherland, 1998), and crime (Yeoman & Griffiths, 1996). Similar findings

have been reported in the US (Duhig, Maciejewski, Desai, Krishnan-Sarin, & Potenza, 2007; Kassinove, Doyle & Milburn, 2000; Ste-Marie, Gupta & Derevensky 2006; Welte, Barnes & Hoffman, 2004). The rate of pathological gambling among adolescents has been found to be as high as 4% - 6% (Fisher, 1999; Gupta & Derevensky, 1998; Hardoon, Gupta & Derevensky, 2004; Griffiths, 1995), which is at least two to three times higher than that identified in the adult population. This is clear evidence that young people are more vulnerable to the negative consequences of gambling than adults, a view supported by Griffiths (2004).

Parents of adolescent problem gamblers are twice as likely to have gambled on commercial gambling games, than parents of other adolescents (Griffiths & Linsey, 2006). They are also more likely to approve of their children gambling. This has been found in other UK studies (Fisher, 1993; Wood & Griffiths, 1998; 2004). Furthermore, a report commissioned by the national lottery on adolescent gambling found that adolescent problem gamblers are much more likely to say their parents approve of their gambling or they don't mind, compared with adolescent social gamblers (MORI Social Research Institute, 2006).

Adolescent gambling is therefore a cause for concern as a small but significant minority of adolescents have a severe gambling problem, and problem adolescent gamblers are more likely than other children to have other addictive behaviours (Griffiths & Linsey, 2006). Evidence would also indicate those who gamble in childhood are more likely to become problem gamblers later in life (Griffiths, 1995; Gupta & Derevensky, 1997). Therefore there is a strong need to raise public awareness of the potential risks involved in gambling and to reinforce the consequences of gambling behaviour among youths (Wood & Griffiths, 2002).

1.2.4 Gambling in older adults

There has been a large growth in gambling participation in older adults. However, the health correlates of gambling participation in this population have not been extensively investigated. Considering that older adults represent one of the largest segments of the population, and have large amounts of 'free' time, research into the health correlates of gambling participation is warranted.

The elderly are less likely to gamble for excitement or to win money, and gambling more than likely fills social needs or alleviates boredom (McNeilly & Burke, 2001). For older adults (65+) gambling can provide opportunities for socialisation, and an occasional form of new entertainment, excitement and an opportunity to relax and get away from 'real-life' problems (McNeilly & Burke, 2001). However, for some retirees, especially those vulnerable to depression from the changes and losses that can occur in aging, casino gambling can become disordered, problematic, and/or an addiction (McNeilly & Burke, 2002). Slot machine games are particularly popular among older adults (Korn & Shaffer, 1999) and have been found to be especially addictive (Griffiths, 1993). Older adults who gamble frequently on EGMs, at bingo and at cards, who gamble for stimulation and who are bored with gambling activities are at risk for problem gambling (Clarke & Clarkson, 2009).

Zaranek and Lichtenberg (2008) found that a large percentage of urban elders are vulnerable to problem gambling, and a large number of demographic, health, psychological and social characteristics such as lower income, being married, poorer mental and physical health, lack of senior optimism, lower social support network, and increased casino visitation were significant predictors of problem gambling behaviours. On the other hand, Vander-Bilt, Dodge, Pandav, Shaffer, & Ganguli (2004) suggest that gambling participation could have positive social and psychological outcomes for older adults, and that gambling may offer a forum of social support for those elders who may otherwise isolate themselves as they age.

Desai, Maciejewski, Dausey, Calderone, & Potenza, (2004) looked at the health correlates of recreational gambling in older adults (65 years and older). Compared with younger adults, there were fewer negative measures of health and wellbeing associated with recreational gambling in older adults. The increased rates of alcohol abuse and substance abuse found in younger gamblers were not observed in older gamblers. However, this could be a reflection of the lower rates of alcohol abuse and substance abuse in older adults in general. There are public health implications due to the potential negative effects of gambling (Shaffer & Korn, 2002). Therefore an improved understanding of the characteristics of recreational gambling is needed to guide the development of public health guidelines for gambling (Desai, Maciejewski, Pantaloni, & Potenza, 2006). Gambling has the potential to become a serious health problem among elders (Zaranek & Lichtenberg, 2008).

1.2.5 Summary of demographic factors

Toneatto and Nguyen (2007) conclude that the majority of research does not examine the processes by which age, SES, or gender, for example, affect the development of gambling problems. It is therefore necessary to investigate the relevant biopsychosocial variables to understand the link between demography and problem gambling. It is vital that greater understanding of demographic variations in overall participation is achieved if one is to estimate the likely social effects of expansion or product changes in existing gambling markets (Griffiths & Delfabbro, 2002). For example, Griffiths (1999a) suggests that in the future, internet gambling and new sports betting facilities are likely to attract increasing numbers of younger males, whereas an increase in slot machines or lotteries will have a significant effect upon the number of women gambling. This chapter has so far focused on participation rates of gambling and demographic factors. The following section will look more specifically at pathological gambling (including definition, diagnostic criteria and consequences), risk factors for pathological gambling, comorbidity, theories of pathological gambling and situational and structural characteristics of gambling.

1.3 Pathological gambling

1.3.1 Definition

‘Pathological’, ‘compulsive’, and ‘problem’ are all terms that have been used interchangeably when describing excessive and persistent gambling causing social, psychological or economic difficulties. ‘Compulsive’ gambling is a layman’s term and one used by Gamblers Anonymous, however, the term proposes ‘ego-dystonic’ behaviour and does not encompass scope for the pathological gambler to be reluctant to cease, despite the negative consequences incurred (Moran, 1970). Other terms include (but are not limited to) ‘addictive’, ‘excessive’, ‘dependent’, ‘compulsive’, ‘impulsive’, ‘disordered’, and ‘at-risk’ (Griffiths & Delfabbro, 2002; Griffiths, 2007a). There is still much controversy about terminological issues. Problem gambling has been conceptualised as an urge to gamble despite harmful negative consequences or a desire to stop. It has been used to describe less serious problems associated with gambling, or to encompass all levels of problem gambling without distinguishing between different severities. However, ‘pathological gambling’ refers to a diagnosable psychiatric disorder and thus to clinically significant symptoms (Hayer, Griffiths & Meyer, 2005). The term ‘pathological’ first emerged in the Diagnostic and Statistical Manual –III

(American Psychiatric Association, 1980) as pathological gambling became recognised as a mental disorder under “disorders of impulse control not elsewhere classified”.

In 1994 it was categorised as an impulse-control disorder in the DSM IV for Mental Disorders (APA, 1994). Severity of pathological gambling is often based on the number of symptoms the individual has from the DSM-IV (APA, 1994). Consequently, the term ‘problem’ gambling is often used to differentiate those in-between pathological and social gambling.

1.3.2 Diagnostic criteria

The ten symptoms of pathological gambling include: 1) preoccupation, 2) progression, 3) tolerance, 4) withdrawal and loss of control, 5) escape, 6) chasing, 7), deception, 8) crime, 9) disruption of personal life and finally, 10) financial bailout (Lesieur & Rosenthal, 1991; APA, 1994). The diagnostic tool can be seen in Table 1.

Table 1: DSM-IV criteria for pathological gambling (APA, 1994).

Persistent and recurrent maladaptive gambling behaviour as indicated by at least five of the following: The individual:
1) is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, studying a gambling system, planning the 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 attempting 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 in order to get even (‘chasing’ one’s losses)
7) lies to family members, therapist, or others to conceal the extent of involvement with gambling
8) has committed illegal acts, such as forgery, fraud, theft, or embezzlement in order to finance gambling
9) has jeopardized 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

Differences in opinion exist as to how many of the criteria the individual needs to meet to be diagnosed as a pathological gambler. The APA established a diagnostic cut-off of five affirmative responses (out of 10). However, Stinchfield (2003) found that modest improvements in classification accuracy were obtained by lowering the cut off score to four. Consequently, there will be variations between studies. Current estimates suggest that just below 1% (Wardle, *et al.*, 2007) of the population meet criteria for problem gambling using the Problem Gambling Severity Index (PGSI: Ferris & Wynne, 2001) and the DSM-IV scale (APA, 1994). Not all problem gamblers are gambling addicts, but all gambling addicts are problem and pathological gamblers. Using problem gambling diagnostic screens such as DSM-IV (APA, 1994) provide operational definitions of problem gambling (scoring three or more out of two criteria on the DSM-IV) and probable pathological gambling (scoring five or more). In this thesis, the term problem gambling will be used to refer to all gambling behaviour associated with harmful effects. This is common among many researchers and organisations to describe the broad spectrum of gambling-related problems (Griffiths, 2004; 2007a; Responsibility in Gambling Trust; Sproston, Erens & Orford, 2000.)

1.3.3 A continuum of problem gambling

The history of gambling, internationally, is that of a stigmatised behaviour having passed through numerous cycles of guarded acceptance and prohibition (Preston, Bernhard, Hunter & Bybee, 1998). However, adopting a medical model of problem gambling has displaced the old image that the gambler was a sinner or a criminal (Griffiths, 2007a). Recently problem gambling has been regarded as a 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 (Griffiths, 2007a). Treatment will therefore require a continuum of responses (Hodgins & El-Guebaly, 2000; Toce-Gerstein, Gerstein & Volberg, 2003). At the lower end of gambling severity, individuals are more likely to initiate and achieve change in their gambling behaviour without the use of formal treatment or self-help groups, whereas at the more severe end of the spectrum, gamblers report having sought treatment that was helpful in overcoming their problem (Hodgins & el-Guebaly, 2000).

1.3.4 Consequences of problem gambling

There is debate over whether problem gambling can be considered an addiction, with some researchers arguing that it has more in common with obsessive-compulsive disorder and should therefore be viewed as an obsessive-compulsive spectrum disorder (Blaszczynski, 1999). Behaviours vary at each level of problem severity. Toce-Gerstein *et al.* (2003) report that gamblers at the lower end of severity tend to engage in 'chasing' behaviour. Gamblers with medium level of severity report lying, gambling to escape and preoccupation with gambling; and problem gamblers report loss of control, withdrawal symptoms, tolerance, risking their social relationships and needing to be bailed out financially. Those at the highest level of problem severity also reported committing illegal acts to support gambling.

1.4 Risk factors for problem gambling

Epidemiological research has shown that problem gambling is more prevalent among men than women (National Research Council, 1999; Wardle *et al.*, 2007) and adolescent boys are more likely than female adolescents to be problem gamblers (MORI Social Research Institute, 2006). Other risk factors include being younger than 25 years of age (with young males at greatest risk); living in urban rather than rural areas; being socially and economically disadvantaged and having ready access to gambling (Welte *et al.*, 2004).

Onset of gambling behaviour at a later age is also one predictor of developing problem gambling within a shorter time frame (Grant & Kim, 2001). In a critical review of risk factors for problematic gambling, Johansson, Grant, Kim, Odlaug, & Gotestam, (2009) found that well established risk factors included age (young), gender (male), cognitive distortions (erroneous perceptions, illusion of control), sensory characteristics, schedules of reinforcement, comorbid disorders (OCD, drug abuse), and delinquency/illegal acts. They found many probable risk factors but these were not well established and the relationship with problem gambling is unclear. It would seem that there is still uncertainty regarding the risk factors for the development and maintenance of problem gambling, and the relative importance of those risk factors that have been established.

Browne and Brown, (1994) found that American college students who were frequent lottery gamblers were more likely to have started gambling at younger ages than less

frequent lottery gamblers. Alcohol abuse is also thought to be a risk factor for problem gambling and Welte, *et al.* (2004) suggest that some individuals with low self-control tend to both drink and gamble excessively, and it is likely that the acute effects of alcohol may lead to poor judgement in gambling. Heavy drinking is frequently part of the gambling experience as casinos often serve free drinks.

A significant association has also been found between problem gamblers and parental regular gambling (Wardle *et al.*, 2007). In addition problem gamblers are significantly more likely to have problem gambling relatives with higher rates of alcohol disorders and substance use disorder than control families (Black, Monahan, Temkit & Shaw, 2006). A study of lottery gambling among American college students found that student lottery gambling was related to having parents who were lottery gamblers (Browne & Brown, 1994).

Additionally, gambling may be used as a way of coping with stress in lives and a means of escape from worries. Wood and Griffiths, (2007a) examined the role that gambling plays in the lives of problem gamblers and the extent to which it may be used as a means of coping by conducting in-depth interviews with 50 problem gamblers. Gambling was used as a coping strategy to achieve escape from negative mood states and consequently facilitated the gambling problem. Gambling to escape was achieved through mood modification needs, filling the void (lack of social interaction; relieving boredom), the need for approval and avoiding problems. Furthermore, cognitive regret also influenced the desire for continued gambling. The regret of losing money leads to chasing losses, which leads to the need to modify mood to escape. However, participants in the study were a self-selected sample – they recognised that they had a problem and were motivated enough to take part. The characteristics exhibited by those problem gamblers who had not yet realised they have a problem or who did not want to take part may be very different.

1.4.1 Family history of gambling

Compared with the general population problem gamblers are significantly more likely to have relatives who gamble (Grant & Kim, 2001). Teo, Mythily, Anantha, & Winslow (2007) found that 26.7% of problem gamblers receiving treatment reported a family history of gambling. A study by Petry, *et al.* (2005) found that a family history of gambling is more apparent for females. The female problem gamblers were more likely

than male problem gamblers to be living with someone with a current gambling problem. Furthermore, the female gamblers in the study, had more friends who gambled than did the male participants. Petry *et al.* (2005) suggest that their gambling behaviours may be more strongly tied to their social network, thus making it more difficult for them to remove themselves from gambling situations. Grant and Kim (2001) also found that the majority of problem gamblers (58%) had at least one first-degree relative who also exhibited symptoms of problematic gambling behaviour. However, the results of these studies must be interpreted cautiously because family members were not interviewed. Further studies are needed to examine the relationship between family history of gambling and the development of problem gambling disorder.

1.5 Comorbidity

A number of studies have found that problem gamblers are significantly more likely to experience comorbidity and financial problems (Crockford & el-Guebaly, 1998; Hall, Carriero, Takushi, et al., 2000; Petry *et al.*, 2005; Shaffer & Korn, 2002; Teo *et al.*, 2007). This has been found in adults (Desai *et al.*, 2006) and adolescent gamblers (Duhig, *et al.*, 2007; Griffiths & Sutherland, 1998). There are significant co-morbidities associated with problem gambling, including depression, anxiety, alcoholism, and obsessive-compulsive behaviours (Griffiths, 2007a). The APA (2000) also reports that problem gamblers are more likely to report increased rates of mood disorders, attention-deficit hyperactivity disorder, substance abuse or dependence, and antisocial, narcissistic and borderline personality disorders. These co-morbidities may exacerbate, or be exacerbated by problem gambling.

1.5.1 Depression

Clarke (2004) found that problem gamblers were more depressed than non problem gamblers. It would also appear that depressed mood prior to gambling can inhibit gambling in non-regular gamblers. However, for regular gamblers the motivation to gamble is still there regardless of their prior mood (Hills, Hill, Mamone & Dickerson, 2001). This could explain why we could expect to find relatively more problem gamblers who are depressed compared to non problem gamblers. Problem gamblers may also suffer irrational distortions in their thinking (e.g. denial, superstitions, overconfidence, or a sense of power or control) (Griffiths, 1994).

1.5.2 Alcohol and drug-related problems

Problem gamblers are significantly more likely to experience more drug- and/or alcohol-related problems than non-gamblers and social gamblers (Huang, Jacobs, Derevensky, Gupta, & Paskus, 2007). Gambling disorders are also significantly more likely to be associated with substance use (Crockford & el-Guebaly, 1998), however, in their review of the literature, Crockford and el-Guebaly (1998) found that the extent of the comorbidity varies depending on the sample characteristics and the instruments used. Toneatto, Skinner and Dragonetti (2002) also found that treatment-seeking problem gamblers have high rates of substance abuse, but gambling treatment outcomes, measured by number of days abstinent, treatment satisfaction or treatment adherence were unrelated to drug history. They therefore concluded that recovery from gambling does not lead to an increase in the use of other psychoactive substances (i.e. substance substitution) aka reciprocity. Liu, Maciejewski & Potenza (2009) also found that compared to non-substance-abusing gamblers, substance-abusing ones have different gambling motivations and engage in heavier gambling.

1.5.3 Crime

It has been reported that compared to the general adult population, those with lifetime problem gambling were significantly more likely to have tobacco dependence and antisocial personality disorder; to be unemployed; to have recently engaged in illegal activity for profit; and to have been incarcerated (Hall *et al.*, 2000). The link between high prevalence of problem gambling in forensic populations has been mentioned in previous studies (Lahn, 2005; Williams, Royston & Hagen, 2005). Toce-Gerstein, *et al.*, (2003) also found that most of the severe problem gamblers reported committing illegal acts to support their gambling. Yeoman and Griffiths (1996) found that 4% of juvenile crime (most notably theft) was associated with gaming machine use and this offers limited evidence that a minority of individuals commit crimes in order to “feed their addiction”. Furthermore, males are more likely than females to have ever been involved in illegal activities to support their gambling behaviour (Ladd & Petry, 2002a; Potenza, *et al.*, 2001). Problem gambling is also associated with violence in couples and dysfunctional families (Folino & Albait, 2009), especially when there is substance abuse. For example, Cunningham-Williams, Abdallah, Callahan, and Cottler, (2007) found that substance abusers with violent tendencies were three times as likely to be problem gamblers as those without such tendencies.

1.5.4 Suicide ideation

Higher rates of suicide ideation and attempts have also been found in problem gamblers seeking treatment (Frank, Lester & Wexler 1991; Petry & Kiluk, 2002; Teo *et al.*, 2007). Compared with non-suicidal gamblers, those with suicidal ideation suffered from more psychiatric symptoms, were less satisfied with their living situations, and experienced more days of conflict in the month before entering gambling treatment. Compared with problem gamblers with no history of suicidal ideation, those with suicidal ideation spent more money gambling in the month before entering treatment, reported greater cravings for gambling, and had higher South Oaks Gambling Screen scores. The data suggests the need for more intensive and focused treatments in problem gamblers with suicidality, however, these results can not be generalised to problem gamblers in general as only a small percentage of problem gamblers actually seek treatment (Petry & Armentano, 1999).

1.5.5 Gender differences in comorbidities

A large-scale survey, conducted in the US, of problem gambling and comorbidity with other psychiatric disorders (Petry *et al.*, 2005) did find gender differences. Most of the substance use disorders, major depressive episode and generalised anxiety disorders were more strongly related to problem gambling among women than men. Petry *et al.* (2005) offer the suggestion that because women have lower rates of substance use disorders and problem gambling in general, women with these disorders may be a more deviant subgroup of the population and therefore more highly comorbid for recurrent maladaptive behaviours characteristic of addictive disorders. However, Ladd and Petry (2002a) found that women with a gambling problem had fewer alcohol and legal problems than men. However, this was among treatment-seeking problem gamblers and the results may not be readily generalised to non-treatment seeking gamblers who may differ in important ways. For example, Hodgins and El-Guebaly (2000) suggest that treatment-seeking problem gamblers may have attained a threshold of severity and consequences that other problem gamblers have not yet reached. Therefore, there may be different experiences or perspectives relating to gambling that compel an individual toward treatment (Ladd & Petry, 2002a).

1.5.6 Summary of comorbidities

Most studies looking at comorbidities in problem gambling are derived from treatment seeking populations. However, it is likely that individuals with more severe symptoms,

or with multiple psychiatric disorders, may be more likely to seek treatment than those with a less severe disorder (Petry *et al.*, 2005). To establish associations between conditions, surveys of the general population need to be conducted. Petry *et al.* (2005) conducted a large-scale survey in the US looking at the lifetime prevalence and comorbidity of problem gambling. The overall rate of problem gambling was 0.4% and 73.2% of problem gamblers had an alcohol use disorder. Drug use disorder (38.1%), nicotine dependence (60.4%) and mood (49.6%), anxiety (41.3%) and personality disorders (60.8%) were also high among problem gamblers. The greater association found between alcohol use disorders and problem gambling indicates that similar environmental, social and/or genetic factors may be associated with both of these disorders (Petry, 2004).

The assessment of clinical comorbid psychopathology is therefore important for guiding appropriate treatment approaches for problem gamblers (Teo *et al.*, 2007). As women appear to progress to problem gambling at a faster rate than men (Grant & Kim, 2002), earlier intervention for women may be required. Furthermore, gambling for women is more likely to be triggered by mood state, and male gambling is more likely to be triggered by sensory stimuli (Grant & Kim, 2002), therefore women may respond better to treatment that targets affective symptoms, and males may benefit more from a cognitive-behavioural approach.

High levels of substance misuse and some other mental health 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 (Griffiths, 2007a). There currently exists screening and treatment of substance use disorders and it has been suggested that the potential exists for primary care physicians to have an important role in the assessment of problem gambling behaviours (Potenza, Kosten & Rounsaville, 2001). As problem gambling is highly comorbid with substance use, mood, anxiety and personality disorders (Petry *et al.*, 2005) treatment for one condition should involve assessment and possible concomitant treatment for comorbid conditions.

Due to the fact that comorbidity reflects the coexistence of gambling with other disorders, Shaffer (2003) argues that it is difficult to determine a) whether gambling behaviour causes a 'gambling disorder' or b) other disorders cause intemperate

gambling and the problems that often accompany excessive gambling, or c) both sets of problems reflect another underlying disorder. However little research has looked at cause and effect of comorbidity in problem gambling. More research is needed to further our understanding of the relationships among these conditions with gambling disorders.

1.6 Theories of problem gambling behaviour

Why do some people gamble more than others, and what factors contribute to behaviour maintenance in gambling? There are numerous theories to explain gambling behaviour. Griffiths and Delfabbro (2002) distinguishes between two broad perspectives. Some theories place a stronger emphasis upon the psychological determinants of gambling and other theories emphasise biological differences between individuals. These theories will be discussed in turn below.

1.6.1 Cognitive-behavioural theories

One argument is that the nature of gambling is cognitive. Wagenaar (1988) suggests that: “*gamblers are motivated by a way of reasoning, not by defects of personality, education or social environment*” (p.3). He argued that gamblers use a variety of heuristics and cognitive biases when making gambling decisions, and they use these to make their decisions appear rational. The 16 cognitive distortions that he believes operate in gambling situations are outlined below:

- *Availability*: What comes to mind first is judged to be more likely.
- *Problem framing*: The context in which the problem is framed will determine the choice of strategy.
- *Confirmation bias*: Seeking information that is consistent with one’s own views and discounting discomfoting information.
- *Fixation on absolute frequency*: When a person uses absolute rather than relative frequency as a measure of success.
- *Concrete information bias*: When concrete information such as that based on vivid memories or conspicuous incidents dominates abstract information such as computations or statistical data.
- *Illusory correlation*: Variables that seem to co-vary when in fact they do not. Illusory correlation is the basis of much superstition in sports and gambling.

- *Inconsistency of processing*: The inability to apply a consistent judgmental strategy over a series of cases.
- *Non-linear extrapolation*: The difficulty in estimating joint probabilities of simple events.
- *Reliance on habits*: People choosing alternatives because it is customary to do so.
- *Representativeness*: The judgment of the likelihood of an event made by estimating its similarity to the class of which the event is supposed to be an exemplar. For example, in blackjack, people expect that the probability of winning is increased after three successive losses (this belief is known as the gambler's fallacy).
- *Justifiability*: A justifiable rule will be preferred over a rule for which no justification can be given.
- *Reduction of complexity*: Complex decision problems must be reduced to simple ones before a decision can be made.
- *Illusion of control*: An activity concerning an uncertain outcome can, by itself, induce in a person, feelings of control over the uncertain outcome.
- *Biased learning structures*: Observed outcomes may yield incomplete information concerning predictive relationships.
- *Flexible attribution*: The tendency to attribute successes to one's own skill, and failures to other influences.
- *Hindsight bias*: Retrospectively, people are not surprised about what has happened and even believe that they did predict the outcome.

These heuristics and biases can give some insight into why gamblers do not learn from their past losses and can help to explain 'irrational' behaviour, however, they have no predictive value. It is difficult to know which heuristic will be applied in a given situation, and it is possible that the same person may use different heuristics in the same situation on different occasions (Griffiths, 1994). For example, Monaghan, Blaszczynski and Nower (2009) found that irrational thoughts and erroneous perceptions of chance differed based on individual wins or losses. Players who lost reported a significantly greater decrease in irrational thoughts and erroneous perceptions of chance and significantly fewer superstitious beliefs than winning players following play. It is clear then that the outcome of play can affect gambling-related thoughts and

beliefs. Furthermore, experienced EGM players significantly overestimated the chances of winning compared to inexperienced players.

1.6.1.1 Positive thinking

In health research particular cognitive strategies have been shown to be beneficial in the face of adversity or while experiencing negative affect (Taylor, 1983; Taylor & Brown, 1988). It is therefore possible that gamblers will search for positive consequences from their behaviour in order to offset negative affect such as frustration, anger and guilt that follows after significant losses (Parke, Griffiths & Parke, 2007). In their study of positive thinking among slot machine gamblers, Parke, Griffiths and Parke (2007) attempted to determine whether after gambling, gamblers compensate and reduce negative affect by identifying positive consequences from experiencing a loss, and identified types of strategies that gamblers employ. Nine types of positive thinking experienced by gamblers were identified and these are summarised in Table 2.

Table 2: Types of positive thinking experienced by gamblers

Type of positive thinking	Effect
Comparative Thinking	Thinking that losses are disposable income that would have otherwise been spent without the chance of winning money, or thinking that other potentially addictive behaviours have been replaced by gambling.
Prophylactic thinking	Thinking that large losses could prevent gambling in the future
Biased frequency thinking	Thinking that winning occurs more often than losing
Chasing validation	Thinking persistence in trying to win back past losses is rewarded in the long run.
Responsibility avoidance	Thinking other negative events in gambler's life allow them to temporarily escape responsibility leading to irresponsible gambling behaviour.
Prioritisation	Prioritising one's life after experiencing gambling losses
Resourcefulness	Thinking creatively in negative situations (usually financial)

Thoughtfulness	Thinking more about others
Fear reduction	Bolstering of self-esteem and personal improvement as result of risk-taking ability.

Some of these categories (*biased frequency thinking, chasing validation and responsibility avoidance*) are closely related to Wagenaar’s (1988) cognitive biases since these are positive cognitive processes. However, Wagenaar’s heuristics were in action to remove doubt, and not negative affect created by the adverse consequences of gambling. The modes of positive thinking reported in the paper appear to be maladaptive for a problem gambler. Some of the cognitive distortions simply do not reflect reality. *Comparative thinking* involving addictions presumes the existence of an ‘addictive personality’. However, there is limited support for this in the literature (Griffiths, 1995) therefore not supporting the argument that gamblers would be addicted to something else if they did not gamble. Also *resourcefulness, thoughtfulness* and *fear reduction* are skills that can be developed through less destructive means. Therefore these maladaptive modes of positive thinking may hinder recovery from a gambling problem. “By overestimating benefits and reducing guilt, positive thinking disrupts the naturally occurring contingencies of reinforcement that might otherwise prevent excessive gambling” (Parke, Griffiths & Parke, 2007, p.51). A gambler must accept that their gambling behaviour has had a negative impact on their life before they can begin the process of recovery.

Parke, Griffiths and Parke, (2007) also found that gamblers who report benefits from losing, start gambling at a younger age, have more time to gamble, gamble twice as often for twice as long, spend more money and claim to win more than gamblers who do not report benefits. Positive thinkers expressed significantly less levels of guilt and the authors offer the suggestion that positive thinkers are able to reduce their guilt levels through thinking positively after losing. There was no difference between positive thinkers and non-positive thinkers in feeling angry, frustrated or cheated. These results also support the theory that gamblers only seek to reduce negative affect caused by guilt, since this can be caused by gamblers themselves. The cause of anger, frustration and feeling cheated might be more attributable to a third party (e.g. machine manufacturers or operators), and therefore positive thinking will have less of an impact on these causes of negative affect (Parke, Griffiths & Parke, 2007).

1.6.1.2 Gambler's fallacy

This is a belief that a gambling outcome is more likely to occur simply because it has not occurred for a period of time (Rogers, 1998; Toneatto & Nguyen, 2007). However, almost all casino game activities are weighted strongly in favour of the house so that people are more likely to lose money than win money. Despite this, gamblers continue to believe they can win money from gambling. Therefore gambling may be maintained by irrational or erroneous beliefs. Many gamblers believe that a particular outcome is likely to occur simply because it has not occurred for some time, even though the probability of the event is independent from one trial to the next. This erroneous belief is known as 'the gamblers fallacy' (Anderson, & Brown, 1984; Orford, 2001; Roney & Trick, 2003).

Gamblers tend to look for 'patterns' or 'streaks' and then bet accordingly, e.g. many roulette players adopt the position that if red, for example, has not won recently, then it is also 'overdue' and therefore more likely to win on the next play (Aasved, 2002). In reality, every spin of the wheel (in non-UK machines), every toss of the coin, and every roll of the dice is independent from any previous outcome. Many lottery players also make their selections based on 'hot' and 'cold' numbers (Rogers, 1998). Some players will choose 'hot' numbers based on the idea that they have recently appeared more often than chance and are therefore more likely to be chosen again. Other players prefer to choose 'cold' numbers based on the idea that they have not been chosen for a while and are therefore overdue.

1.6.1.3 Locus of control

So why do gamblers persist, chase losses and succumb to the 'gamblers fallacy' and other forms of irrational thinking? Attributional theory (Weiner, 1974) attempts to explain this. Gamblers generally attribute their successes to internal causes or to things that are within their control, e.g. a win signifies their sound knowledge and skill, whereas a loss is attributed to external causes and is explained away as 'bad luck' rather than any personal shortcomings. The psychological construct of locus of control (Rotter, 1966) can also be applied here. Individuals who believe they have control over life events, happiness, health status, for example, have an internal locus of control, whereas those who give more weight to the influence of chance or powerful others on their fate have an external locus of control (Moore & Ohtsuka, 1999). Young problem gamblers

are particularly more likely to have more faith in their ability to manipulate chance and 'beat the system' (Moore & Ohtsuka, 1999).

Langer and Roth (1975) attempted to find out whether a pattern of early successes would induce an internal control or 'skill' orientation in their participants. Ninety male undergraduate students were asked to predict the results of 30 coin tosses, an event they should perceive as entirely chance-determined. Unbeknown to the participants, the outcomes were predetermined by the researchers who established three different conditions of 15 'wins' and 15 'losses' each. Those tested in the 'early win' condition experienced more initial wins than losses, and vice versa for those in the 'early loss' condition. Those in the random condition were given an even distribution of wins and losses throughout the series. The researchers found that early successes reinforced the development of an illusion of control to a much greater extent than early failures. A similar study with coin tosses was conducted with school children (Frank & Smith, 1989). Their results also confirmed the 'early win' hypothesis and they concluded a pattern of early wins were likely to influence a gambler's future expectations of success.

Coventry and Norman (1997) have also demonstrated that those experiencing early wins are more likely to continue playing longer, and are more likely to view themselves as successful, than those experiencing the same proportion of wins but in a different sequence. These results would suggest early patterns of winning and losing are of importance in persistence of gambling behaviour (Sharpe, 2002). Thus, an early history of positive reinforcement can also serve as a discriminative stimulus to encourage future gambling sessions. Furthermore, early winners are likely to attribute any later losses to external causes since an internal locus of control has already been established (Frank & Smith, 1989; Langer & Roth, 1975), and they would believe their bad fortune could be overcome by persistence and determination (Aasved, 2002). Such irrational control beliefs have been found to be strongly associated with problem gambling (Joukhador, Maccallum & Blaszczynski, 2003; Moore & Ohtsuka, 1999). When gamblers get predictions wrong and they can no longer entertain their delusions of control over chance-determined events, they distort the reality of the situation in other means (Aasved, 2002). Many gamblers formulate hindsight biases (Shewan & Brown, 1993) which allow them to rationalise their losses. This typically occurs in situations where losses can be explained away as 'flukes' caused by random, uncontrollable external

factors rather than failures of the gamblers own expertise or instincts (Shewan & Brown, 1993).

1.6.1.4 Illusion of control

Cognitive theories of gambling (e.g., Langer, 1975; Wagenaar, 1988; Walker, 1992) propose that certain characteristics of gambling games foster an exaggerated confidence in one's chances of winning. Consequently, even though the winning outcomes are determined largely or purely by chance, the gambler develops an 'illusion of control' such that he/she believes they can master the game and recoup past losses. An illusion of control is the tendency for people to believe they can control or at least influence, outcomes they have no influence over (Toneatto & Nguyen, 2007). This was first shown by Langer (1975) whose experiments demonstrated that gamblers can be made to believe they can predict or influence the outcome of purely chance events. Langer found that participants do not distinguish chance from skill-determined events and instead, whether or not an event is reacted to as if it is controllable largely depends on factors like competition, choice, familiarity and involvement.

The lottery can create an illusion of control because players are able to choose their own numbers. Players may adopt complex number selection strategies based on previous results and therefore lottery players are probably more prone to a misperception that skill can influence lottery outcomes than non-players (Rogers & Webley, 2001). Illusion of control can underlie people's "unrealistic optimism" about their own destinies (Weinstein, 1980; 1989). The overconfident expectation that an event will or will not happen is likely to be present when playing lotteries, even if people 'know' the objective odds are against them (Rogers & Webley, 2001). They maintain an unrealistic optimism about future events.

1.6.1.5 Superstitious beliefs

Many people also adopt superstitious beliefs such as believing possession of certain objects will increase the chance of winning (Bersabe & Arias, 2000; Toneatto, Blitz-Miller, Calderwood, Dragonetti, & Tsanos, 1997). Superstitious beliefs are characterised by the failure to recognise the lack of a cause-and-effect relationship between a behaviour and subsequent event (Joukhador, Blaszczynski, & Maccallum, 2004). One widespread behavioural superstition is that one must continue to gamble in

the event that the winning outcome takes place (e.g. using the same numbers for the lottery every week) (Walker, 1992). Cognitive superstitions may also include prayer, hope, positive expectations and attitudes, with players believing that certain mental states can influence the probability of winning (Toneatto *et al.*, 1997). Problem gamblers are more likely to endorse superstitious beliefs than non-problem gamblers (Joukador *et al.*, 2004). It is thought that superstition exists in most gambling activities and other games of chance (Rogers, 1998). At present, there are no instruments to measure subsets of cognitive distortions such as superstitions, to properly assess the nature of the relationship between specific cognitive schemas and gambling behaviour (Joukador *et al.*, 2004).

1.6.1.6 'Near misses'

Forms of gambling vary as to the degree of skill involved. Electronic gaming machines (EGMs) and roulette have little skill, if any, whereas games such as bridge, poker and blackjack require experience, an aptitude for the game and strict adherence to probability (Walker, 1992). Between these two extremes are gambling events such as horse / dog racing and sports betting which require some degree of skill. In games of skill, 'near misses' (more accurately reframed as 'near wins' by problem gamblers (Parke & Griffiths, 2004a)) provide useful feedback for participants and encourages them to continue because they know that success is within their reach (Parke & Griffiths, 2004a). Near misses are classed as failures that are close to being successful, such as when a chosen horse finishes in second place or when two cherries are displayed on a fruit machine. They are widely believed to encourage future play, even in games of chance where the probability of winning remains constant from trial to trial. The impact on the gambler has long been recognised (e.g., Reid, 1986), even to the extent that the misuse of fruit machine near misses has been the focus of legal cases (Harrigan, 2008). Within Lottery play, a near miss may be perceived when a set of winning numbers are numerically close but not equal to those on the player's ticket (Rogers & Webley, 2001).

Some forms of gambling, particularly slot machines, are fixed to ensure a higher than chance frequency of near misses. As a consequence, the gambler may feel like they are 'not constantly losing but constantly nearly winning' (Griffiths, 1991). The near miss could produce some of the excitement of a win, i.e., a secondary reinforcement (Parke & Griffiths, 2004a). It may increase the seductive appeal of gambling by reinforcing the notion that wins are getting increasingly closer, thereby encouraging the continuance of

play (Griffiths, 1990a). It has also been suggested that there is an optimal percentage of near misses (Griffiths, 1999b; Kassinove & Schare, 2001) and near misses will only work up to a point. In their study on the effects of the near miss on slot machine gambling, Kassinove and Schare (2001) found the near miss had a statistically significant effect on gambling persistence. Specifically, the 30% near miss condition led to greater persistence than did the 15% or 45% near miss conditions. If the near miss is not followed frequently enough by a win then it will lose its effect and, if it occurs too often, it loses its effect through extinction. A 45% near miss is excessive, because it is not followed frequently enough by a win. From a gaming industry perspective, very slight manipulation of near misses may reap huge commercial rewards in the long run but may also have the potential to influence ‘addictiveness’ in gambling situations (Griffiths, 1999b).

Related to near misses is the issue of personal control in a gambling activity. This refers to the gambler’s level of involvement in arranging their gamble. On games of pure chance (e.g., lottery, roulette), all gamblers have the same odds of winning. However, gamblers have inflated confidence when they are given the opportunity to choose their lottery ticket, or throw the roulette ball themselves, compared to conditions where the action is performed by another (Davis, Sundahl, & Lesbo, 2000; Ladouceur & Mayrand, 1987; Langer, 1975). Clark, Lawrence, Astley-Jones and Gray (2009) found that although near misses were rated as more unpleasant than full-misses, they simultaneously increased the desire to play the game. However, near misses only increased the desire to play when the participant had direct personal control over arranging their gamble. Clark *et al.* (2009) suggest that near miss outcomes promote gambling behaviour by fostering an illusion of control, which is greater when the gambler has personal control.

1.6.1.7 Chasing

When gamblers lose so much that they feel they are ‘in too far to quit now’ they become entrapped. They have passed the point at which they could safely cut their losses and, therefore, they believe they must continue to play if they are to have any chance to recover (Walker, 1992). Inevitably, this irrational thinking leads to ‘chasing’ losses. Problem gamblers often try to ‘chase’ their losses but instead they get deeper into debt and become determined that a big win will repay their loans and solve all their problems (Breen & Zuckerman, 1999; Griffiths, 2003a; Lesieur & Custer, 1984). Lesieur (1979)

describes ‘chasing’ behaviour as the most significant step in the development of problem gambling. It consists of gambling and losing, followed by more gambling to ‘even the score’.

Chasing behaviour can occur on another day (between-session chasing) or it can occur on the same day (within-session chasing). Breen and Zuckerman (1999) suggest a tendency to gamble too long within a particular session must be a contributing factor to the development of gambling problems. Problem gamblers have difficulty quitting regardless of whether they are losing or winning. Winnings are frequently invested immediately and this type of ‘within-session’ chasing behaviour is important because it contributes to crippling and demoralising losses (Breen & Zuckerman, 1999). As gambling becomes dysfunctional and problematic, it is likely that these cognitive distortions become exacerbated (Joukhador *et al.*, 2003). Responsible gambling measures need to also address informed choice – providing people with the necessary information for informed decision-making (Blaszczynski, Ladouceur, Nower & Shaffer, 2008). For example, several studies (Gadbury & Ladouceur, 1989; Ladouceur, Gadbury, Dumont & Rochette, 1988; Toneatto, *et al.*, 1997), have found that up to 80% of problem gamblers seeking treatment described a range of irrational verablisation or cognitive distortions. Therefore measures to address informed choice need to target these common misconceptions so that gambling choices will be based on realistic perceptions (Blaszczynski *et al.*, 2008).

1.6.2 Behavioural theories

Behavioural psychology involves the role of rewards, punishments and associational learning. Gambling may be viewed as a behaviour that has been shaped in part by the environment. Behavioural theorists argue that gambling behaviour is learnt and the concept of reinforcement is especially useful in explaining gambling behaviour. Excessive gamblers are victims of the variable-ratio schedules (reinforcements that are presented randomly and unpredictably) that are inherent in all games of chance (Buss, 1978; Skinner, 1953). The constant rewards (i.e., reinforcements) that a person receives in a gambling situation can lead them to become addicted. Such reinforcements may be financial (e.g., winning money), physiological (e.g., ‘the thrill of gambling’), psychological (e.g., raising self-esteem, peer praise) or psychosocial (e.g. the social meaning of the activity) (Griffiths, 1999b). Skilful or lucky gambling will be reinforced by the reward of winning money while careless or unlucky gambling should be

extinguished by the punishment of losing it (Dickerson, Cunningham, Legg-England & Hinchy, 1991). However, in cases of problem gambling, extinction of the betting response through monetary loss does not occur (Aasved, 2002).

1.6.3 Need state models

Need-state theories assume that people gamble to escape unpleasant feeling states such as anxiety, depression and boredom (Griffiths & Delfabbro, 2002). People may continue to gamble as a result of becoming conditioned to the excitement or arousal associated with gambling, and may feel bored, unstimulated and/or restless when not gambling. Proponents of the classical conditioning models (Anderson & Brown, 1984) would argue this approach.

Although gambling behaviour may be explained in terms of behaviourism, need-state models or cognitive theories, it is still unclear why some people become problem gamblers while others do not. Heavy gambling may contribute towards loss of control, irrational beliefs and greater psychological dependence, but it is important to determine what makes some gamblers more susceptible to these factors than others (Griffiths & Delfabbro, 2002). Research into biological and personality factors attempt to determine whether problem gamblers possess qualities that would predispose them to excessive gambling.

1.6.4 Personality theory

It has been hypothesised that personality is one of many factors contributing to the development and maintenance of problem gambling (Bagby, *et al.*, 2007). So far there have been limited studies focusing on personality characteristics of problem gamblers but some personality traits investigated include sensation seeking, impulsivity, risk-taking, extraversion, neuroticism, deferment of gratification and competitiveness. More knowledge about personality characteristics could be helpful in understanding precursors related to problem gambling, as well as for designing more effective prevention and intervention measures.

A longitudinal study of a birth cohort of young adults in New Zealand was conducted to determine whether the personality correlates of problem gambling are similar to the personality correlates of other substance-related addictive disorders (Slutske, Caspi & Moffitt, 2005). At 21 years of age problem gambling was associated with higher scores

of negative emotionality and lower scores of the personality dimension of constraint measured at 18 years of age compared with a control group who did not have a past-year addictive disorder at age 21 years. Problem gambling was also associated with risk-taking and impulsivity. The personality profile of the problem gambler was similar to the profiles associated with alcohol, nicotine and cannabis dependence. The authors concluded that from the perspective of personality, problem gambling has much in common with the addictive disorders.

1.6.4.1 Sensation seeking

Sensation seeking is possibly the most researched personality trait with regards to problem gambling (Parke, Griffiths & Irwing, 2004). Sensation seeking focuses on the need for new and varied experiences and sensations, and taking physical and social risks and sometimes dangerous activities for the sake of such experiences (Zuckerman, 1979). Individuals who feel bored, experience sensations of hypoarousal, and have a relatively high need for stimulation will drink, use drugs, gamble, seek novel sexual experiences etc, to relieve these conditions by inducing affective states of arousal, exhilaration and euphoria (Aasved, 2002). Individuals who are under-aroused or under-stimulated may find the stimulation and excitement associated with gambling arousing, exhilarating and reinforcing, and therefore gambling may become a means of maintaining an optimal level of arousal (Toneatto & Nguyen, 2007) (similar to need state theory).

The theory of sensation seeking was first put forward Zuckerman (1979). In relation to gambling he suggested that: “individuals entertain the risk of monetary loss for the positive reinforcement produced by states of high arousal during periods of uncertainty, as well as the positive arousal produced by winning” (p.211). He predicted problem gamblers would have higher sensation seeking levels than non-problem gamblers. The arousal or excitement produced by gambling is rewarding to the high sensation seeker, therefore, their priority is to maintain arousal by playing for as long as possible, despite the punishing effects of monetary losses (Breen & Zuckerman, 1999). However, excitement-seeking was found to be higher than the norm in both problem gamblers and non problem gamblers (Bagby *et al.*, 2007), suggesting that excitement-seeking may not be a specific marker of problem gambling but rather a characteristic common to all those who gamble.

Furthermore, Pantalon, Maciejewski, Desai and Potenze (2008) found individuals reporting a motivation to gamble for excitement were more likely to acknowledge non-gambling problems related to impaired impulse control including alcohol and substance abuse / dependence. They were also more likely to be heavier gamblers and more 'at risk' for developing problem gambling. Though, Anderson and Brown (1984) did find sensation-seekers bet higher in a real gambling situation than an artificial gambling situation, but whether placing bets was a means of obtaining higher arousal, or whether high arousal produced by other factors in the real gambling situation makes sensation-seekers bet higher, is unknown.

Walker (1992) offers one suggestion for the conflicting results: it may be that sensation seeking predisposes a person to gamble but gambling may change the personality of the gambler. Depression may be induced by the financial losses and so the personality of the gambler may change from a positive sensation seeking mode into a negative and withdrawn mode. Therefore, supporting this theory, it follows that non-gamblers would be lower on sensation seeking; moderate gamblers would be higher; but problem gamblers would score lower. Breen and Zuckerman (1999) also argue that the failure of some studies to support the sensation seeking hypothesis in problem gamblers might be due to methodological issues such as small samples or failure to control for variables such as age and sex.

There is also evidence to suggest sensation-seeking scores diminish with age (Gonzalez-Ibanez, Mora, Gutierrez-Maldonado, Ariza & Lourida-Ferreira, 2005) with a stronger presence of this trait among younger participants (Pantalon *et al.*, 2008). Arousal is also thought to increase with the expectancy of winning money. Ladouceur, Sevigny, Blaszczynski, O'Connor and Lavoie (2003) found that it is the expectancy of winning money that is exciting and not playing the game. When playing for fun, gambling becomes significantly less stimulating than when playing for money. Sensation seeking is a variable of great importance both in the choice of gambling method and in the way gambling develops (Gonzalez-Ibanez, *et al.*, 2003). Certain types of gambling activities such as casino games and race track betting, may be more likely to attract high sensation seekers and low sensation seekers prefer less stimulating outlets such as off-track betting parlours (Coventry & Brown, 1993).

1.6.4.2 Impulsivity

Impulsivity is thought to be central to impulse control disorders such as problem gambling (Alessi & Petry, 2003; Blaszczynski, Steel & McConaghy, 1997; Petry 2001; Petry & Casarella, 1999; Potenza, Kosten & Rounsaville, 2001). Multiple studies have reported problem gamblers score higher than healthy volunteers on measures of impulsivity (Blanco, Orensanz-Munoz, Blanco-Jerez, & Saiz-Ruiz, 1996). Furthermore, Blaszczynski, Steel and McConaghy (1997) found heightened impulsivity is associated with the degree of severity of psychological and behavioural change in problem gamblers, and Nower, Derevensky and Gupta (2004) found impulsivity and intensity-seeking was highly predictive of problem gambling behaviour in youths. Bagby *et al.* (2007) and Clarke (2004) also found problem gamblers scored higher on impulsiveness than non-problem gamblers. Myrseth, Pallesen, Molde, Johnsen & Lorvik (2009) found that neuroticism, openness, impulsivity, and need for stimulus intensity were significant predictor variables of problem gambling. However, Allcock and Grace (1988) found problem gamblers are no more likely to be impulsive than in other substance abuse control groups, suggesting that impulsivity may not be specific for gambling addiction but rather associated with addictions in general. They suggest research on traits of impulsivity in problem gamblers is limited and further evidence is required.

However, a more recent study (Blanco, *et al.*, 2009) simultaneously examining in a group of problem gamblers measures of obsessionality/ compulsivity and impulsivity found a positive correlation between the level of impulsivity and problem gambling severity, thus consistent with prior research (Blaszczynski, Steel & McConaghy, 1997). Blanco *et al.* (2009) also found improvement in symptoms of problem gambling was only associated with decreases in impulsivity and not obsessionality/compulsivity. Furthermore, in their study, they hypothesised that patients treated with paroxetine (a SSRI used in the treatment of obsessive-compulsive disorder) would have greater decreases in impulsivity and gambling behaviour than those treated with placebo. However, there were no significant differences between the paroxetine and placebo treated groups regarding the changes in impulsivity or gambling behaviour, suggesting the changes in impulsivity were not due to a specific pharmacological effect.

1.6.4.3 Extraversion

Personality traits such as extraversion can be used to explain gambling. The (theoretical) constructs of introversion and extroversion were developed by Eysenck (1947; 1952). Introverts prefer being alone and working in quiet surroundings; they are more moral, more inhibited and more influenced by punishment, whereas extroverts are happier, more sociable, crave excitement and enjoy noisy and active environments (Walker, 1992). They are less aware of social rules, more likely to be impulsive and act on the spur of the moment, and they are more influenced by rewards than punishment. These characteristics suggest that the extrovert should be more drawn to gambling. They will be more influenced by the steady flow of rewards that should be sufficient to keep the extrovert involved.

The introvert requires a stable and predictable environment and so will focus on the losses and leave the game early. However, there is little research to support this hypothesis. Although Bartussek, Diedrich, Naumann and Collett (1993) found evidence for extraversion among problem gamblers, the majority of studies have failed to show that problem gamblers are more extraverted than social gamblers or non-gamblers (Barnes & Parwani, 1987; Carroll & Huxley, 1994; Malkin & Syme, 1986). Problem gamblers have been found to have significantly higher psychoticism and neuroticism scores on the Eysenck Personality Questionnaire than controls (Blaszczynski, Wilson, & McConaghy, 1986; Roy, Custer, Lorenz, & Linnoila, 1989). Furthermore, comparing problem gamblers and non-problem gamblers, Bagby *et al.* (2007) found that problem gamblers scored significantly higher on the neuroticism domain and significantly lower on the conscientiousness domain. Problemgamblers also scored higher on impulsiveness than non-problem gamblers.

1.6.4.4 Competitiveness

Other personality characteristics that may impact on gambling behaviour are deferment of gratification and competitiveness. Little research has been conducted on these variables, however, a study by Parke *et al.* (2004) found both to be predictive of problem gambling (i.e. low level of deferment of gratification and high levels of competitiveness were associated with problem gambling). Parke *et al.*, (2004) suggest competitive people may be more at risk of problem gambling behaviour because they may be more prone to chasing behaviour, i.e. they are less inclined to accept a loss and

will try to win back their losses but it is highly probable they will lose more and the need to recoup losses increases as time passes. Winning may also be more rewarding for competitive gamblers and after incurring losses, as the competitive person feels greater triumph by defeating unlikely odds and emerging from a dire situation. Deferment of gratification and competitiveness may be risk factors for problem gambling and this information should be acknowledged in the public domain so that family members, friends, health professionals can look at their tendency to be competitive or their tendency to seek instant gratification (Parke *et al.*, 2004).

The role of personality in the development and maintenance of problem gambling suggests problem gamblers differ from non-gamblers or other gamblers in some personality traits. There is strong evidence for impulsivity. Although there is evidence of other related personality traits among problemgamblers (e.g., extraversion, neuroticism, psychoticism, and antisocial characteristics) the evidence for them is weaker and less consistent. Personality traits can be contributory factors in the development of problem gambling. However, personality traits on their own will never fully explain why some people develop addictive gambling problems and others do not. This is due to the issue of causation. For example, if high sensation-seekers are more likely to gamble, what is the direction of causation (Walker, 1992)? Does sensation seeking cause the gambling or do gamblers report being sensation-seekers? Depression and gambling are linked, but does the depression cause the gambling or do people become depressed once they start gambling? High scores on neuroticism may have made individuals vulnerable to develop problem gambling, or having a gambling problem may have contributed to the high scores on this domain (Mysreth *et al.*, 2009). Longitudinal research is required to gain information on this. It is important to know whether the personality trait differences preceded the onset of gambling (Walker, 1992).

1.6.5 Biological theories

Numerous studies have demonstrated that gambling involvement and problems run in families (Black *et al.*, 2006; Gambino, Fitzgerald, Shaffer, *et al.*, 1993). Black *et al.* (2006) found that 8% of the first-degree relatives of problem gamblers had a lifetime history of problem gambling (in comparison to 2% of first-degree relatives of non-problem gamblers. Some experts attribute the familial transmission of gambling and problem gambling to social modelling influences (e.g., Gupta & Derevensky, 1997). Whether it is genetic or environmental factors that are more important is yet to be

discovered, although many researchers have attempted to search for indicators of biological vulnerability for problem gambling and specific susceptibility genes associated with problem gambling (e.g., Blanco *et al.*, 1996; Carrasco, Saiz-Ruiz, Hollander, *et al.*, 1994; Comings *et al.*, 1996).

1.6.5.1 Twin studies

Evidence from twin studies can demonstrate the importance of hereditary factors. In a study involving 2,889 sets of twins, Slutske, Zhu, Meier and Martin (2010) found genetic factors accounted for 49.2% of the variance in problem gambling among men and women, and there was no evidence for shared environmental influences contributing to variation in problem gambling. Furthermore, Xian *et al.*, (2008) found in a sample of 1,354 sets of twins, that problem gambling symptoms were significantly associated with cognitive distortion scores even after controlling for genetic and shared environmental influence. However, such genetic studies are not providing evidence of a specific problem gambling genetic predisposition, but rather a propensity for an impulse control disorder (Orford, Sproston, Erens, White & Mitchell, 2003). It is likely a range of genetic factors interact to create a disposition, rather than one genetic factor.

1.6.5.2 Neurochemical and genetic causes

It has been suggested receptor genes and neurotransmitter dysregulation may be linked to reward deficiency, arousal, impulsivity and problem gambling (Carrasco *et al.*, 1994; Comings *et al.*, 1996; Moreno, Saiz-Ruiz & Lopez-Ibor, 1991). Serotonin (mood regulation), norepinephrine (mediating arousal) and dopamine (reward regulation) have both been thought to be connected with impulsivity, mood disorders and impaired control (Bergh, Eklund, Sodersten & Norden, 1997; Moreno *et al.*, 1991). Comings *et al.* (1996) found that problem gamblers are significantly more likely than controls to possess the dopamine D2A1 allele receptor gene that is a significant risk factor in problem gambling. It is hypothesised that a lack of D2 receptors cause individuals to seek pleasure-generating activities, which places them at high risk for addictive, impulsive and compulsive behaviours including problem gambling (Blum *et al.*, 1996).

Chasing losses is also associated with increased activity in cortical areas linked to incentive-motivation and an expectation of reward (Campbell-Meiklejohn, Woolrich, Passingham & Rogers, 2008). By contrast quitting was associated with decreased

activity in these areas but increased activity in areas associated with anxiety and conflict monitoring (Campbell-Meiklejohn *et al.*, 2008). Therefore the authors concluded that excessive loss-chasing behaviour in problem gambling might involve a failure to appropriately balance activity within neural systems coding conflicting motivational states. Biologically based traits of impulsivity may create a subset of gamblers who exhibit differential responses to reward and punishment, along with a propensity to seek out rewarding activities, an inability to delay gratification, a dampened response to punishment and failure to modify behaviour because of adverse consequences (Blaszczynski & Nower, 2002).

1.6.6 Summary of the theories of problem gambling behaviour

The theories described above are not mutually exclusive but, rather, share many common factors. Blaszczynski and Nower (2002) suggest that essentially, each of the theories “acknowledges the interaction of key biopsychosocial variables in the aetiological process but emphasises a different set of operations to account for the progression from initial participation to impaired control and persistence” (p.489). This leads to wrongly concluding that problem gamblers form a homogenous population, and that treatments can be applied effectively to all problem gamblers regardless of gambling form, gender, developmental history or neurobiology.

Blaszczynski and Nower (2002) have developed a pathways model of problem gambling which integrates biological, personality, developmental, cognitive, learning theory and environmental factors of problem and problem gambling into a theoretical framework. It is proposed that three distinct subgroups of gamblers manifesting impaired control over their behaviour can be identified. The groups include (a) behaviourally conditioned problem gamblers, (b) emotionally vulnerable problem gamblers and (c) antisocial, impulsivist problem gamblers (for a detailed explanation see: Blaszczynski & Nower, 2002).

Ecological factors (such as availability and access to gambling) are the starting block common to all pathways. All three pathways are also subject to operant and classical conditioning, and cognitive processes. Pathway 1 gamblers fluctuate between heavy and problem gambling, are more motivated to enter treatment and may achieve sustained controlled gambling after treatment. Pathway 2 gamblers are more likely to present with childhood disturbance, a history of poor coping and problem solving skills, mood

disturbance (depression, anxiety), and risk-taking and boredom proneness. These factors produce an ‘emotionally vulnerable gambler’, whose participation in gambling is “*motivated by a desire to modulate affective states and/or meet specific psychological needs*” (p. 492). The third group is characterised by a “*biological vulnerability toward impulsivity, early onset, attentional deficits, antisocial traits and poor response to treatment*” (p.492). Neurological or neurochemical dysfunctions underpin this vulnerability. Pathway three gamblers are also more likely to have poor interpersonal relationships, excessive alcohol and drug experimentation and criminal behaviour.

Gambling is a multifaceted behaviour, strongly influenced by contextual factors that cannot be encompassed by any single theoretical perspective. Griffiths and Delfabbro (2002) point out that contextual factors include variations in gambling involvement, motivation across different demographic groups, the structural characteristics of activities and the developmental or temporal nature of gambling behaviour. Other factors to consider include the types of games and particular risk factors.

1.7 Benefits of gambling

Although extensive research has been conducted on the adverse mental health and social consequences of gambling, little research has examined the advantages. Shaffer and Korn (2002) have highlighted some of the benefits of gambling. It can provide a sense of connectedness and socialisation through leisure time entertainment. It is a form of adult play (Smith & Abt, 1984) and provides fun and excitement. It can also enhance skills such as memory, problem solving, mathematical proficiency, concentration and hand-to-eye physical coordination (Shaffer & Korn, 2002). Gambling can provide economic development in communities due to the expansion of casinos, which can stimulate tourism and hospitality, and lead to job creation. Public health perspectives of gambling can also address socioeconomic determinants such as income, employment and poverty, and are not limited to the biological and behavioural aspects (Shaffer & Korn, 2002). With online gaming, gamblers can play at any time from the comfort of their own home and do not need to travel to exotic locations. There is also no pressure from others trying to get you to bet more and you can play at your own leisure. Another advantage of online casino sites is that most let you play without money until you improve your skills and become more proficient and confident in the game. Gambling can create an opportunity for escapism from the stresses of everyday life and when done responsibly it can enthrall surprise and lead to hours of enjoyment.

Good gamblers with high predictive intelligence possess many life skills that in the right circumstances can be transferred to the workplace (Griffiths, 2007b). One study looking at the benefits of poker playing (Parke, Griffiths & Parke, 2005) has found that the skills required for successful play in poker can be transferred to the workplace and can benefit an individual in their employment. The appeal of poker is that the scope to influence the outcome is vast, unlike many other forms of gambling. It is primarily a game of skill. Playing poker has the potential to help develop a whole range of different transferable skills particularly in a workplace situation (Parke *et al.*, 2005). They have summarised some of the traits and skills that they believe are needed to be a successful poker player:

- *Critical evaluative skills*: being able to appraise situations realistically and anticipate problems.
- *Numerical skills*: ability to handle and interpret numerical and statistical information – many jobs require probability skills and the ability to interpret data summaries.
- *Pragmatism skills*: making the best of a non-ideal situation and accepting what you cannot change.
- *Interpersonal skills*: being able to identify an opponents ‘tell’, and knowing how to respond to different people in different situations.
- *Problem-solving skills*: being able to identify different strategies and approaches.
- *Goal orientation skills*: ability to set goals and to formulate strategies to achieve those goals.
- *Learning skills*: ability to continuously learn, and to learn from others.
- *Higher-order analytic and strategic skills*: ability to extract general principles from immediate or concrete situations and to formulate appropriate strategies.
- *Flexibility skills*: ability to adapt to any situation or to be opportunistic when a situation presents itself.
- *Face management / deception skills*: ability to knowingly deceive someone is part of the game in poker. Telling white lies to keep face or to be diplomatic can be extremely important.
- *Self-awareness skills*: ability to play to strengths and acknowledge weaknesses.
- *Self-control skills*: ability to act with a cool head under pressure and to show the nerve to cope under adversity.

The authors argue that all of these can be utilised in other contexts to bring about success in other areas of peoples' lives, particularly in the areas of employability and future success within that job.

1.8 Structural and situational characteristics of gambling

The various characteristics of gambling activities like fruit machines and scratchcards have the potential to induce excessive gambling regardless of the gambler's personality, environment and/or genetic make-up (Griffiths, 1999b). Various design features have been used to entice people to gamble and to keep them gambling. The methods mainly fall into two types – situational and structural characteristics (Abbott, 2007; Griffiths, 1993; 2007a; Griffiths & Parke, 2003; Parke & Griffiths, 2006; 2007). Situational characteristics are primarily features of the environment (including location, the number of gambling venues in a specified area, possible membership requirements), as well as internal features of the gambling venue (e.g., décor, heating, lighting) and get people to gamble in the first place (Griffiths & Parke, 2003). Griffiths and Parke (2003) suggest that by identifying particular situational and structural characteristics it may be possible to: examine how different situations might evoke different levels of gambling in the same individual; understand player motivation and what influences how they gamble; educate problem gamblers about such warning signs as an ancillary form of prevention and treatment. They may also help clarify why some forms of gambling are more attractive to particular socioeconomic classes.

Structural characteristics are responsible for reinforcement and facilitate excessive gambling (Griffiths, 1999a). An analysis of the structural characteristics allows us to learn more about the psychology of gambling (i.e., those characteristics that facilitate the acquisition, development and maintenance of gambling behaviour irrespective of the individual's psychological, physiological, or socioeconomic status) (Parke & Griffiths, 2007).

Common structural and situational characteristics, outlined by (Griffiths, 1999a), include:

- Stake size;
- Event frequency (time gap between each gamble);

- Amount of money lost in a given time period;
- Prize structures (number and value of prizes);
- Probability of winning;
- Size of jackpot;
- Skill and pseudo-skill elements (actual or perceived);
- ‘Near miss’ opportunities (number of near winning situations);
- Light and colour effects;
- Social or asocial nature of the game (individual and / or group activity);
- Accessibility (e.g. opening times, number of outlets, membership rules);
- Location of gambling establishment (out of town, next to work place etc);
- Type of gambling establishment (e.g. betting shop, amusement arcade);
- Advertising;
- Rule of the game (complicated or easy).

1.8.1 Structural characteristics

Structural characteristics appear to be an increasingly important factor in the maintenance of gambling behaviour. Each of these structural features may (and almost certainly does) have implications for gamblers’ motivations and the potential ‘addictiveness’ of gambling activities (Griffiths, 2007a). Those 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. People who enjoy a challenge when gambling may be attracted to such characteristics. However, they may also contribute to excessive gambling if people overestimate the effectiveness of their gambling systems and strategies (Griffiths, 2007a).

1.8.1.1 Characteristics associated with problematic play

Games that involve an element of skill and create ‘near misses’ are more likely to be associated with problem gambling (Griffiths, 1999a). Other factors associated with higher levels of problematic play include the probability or perceived probability of winning, and the possibility of using credit to play (Parke & Griffiths, 2007). Shaffer and Korn (2002) have said that there is much to be learnt about the relationship between people and the games they choose to play. Knowledge of the determinants that facilitate or inhibit the development of gambling disorders is required to understand the

biopsychosocial influences of specific games that people play. The choice of gambling type is likely to reflect an interaction of a wide array of intrapersonal, interpersonal and environmental variables (Toneatto & Nguyen, 2007). Cognitive factors will also reflect the interaction between the structural characteristics of the gambling type, psychobiological factors and sociodemographic variables. Consequently, measuring the complex interplay of these variables is an important way of understanding how gamblers perceive and interpret the act of gambling (Toneatto & Nguyen, 2007).

The event frequency is a vital structural characteristic of gambling and it has been found that continuous activities (e.g. horse racing, slot machines, casino games) with a more rapid event frequency are more likely to be associated with gambling problems (Griffiths, 1999a). Activities with very short time intervals (e.g., a few seconds) between each gamble will increase the amount of money that can be lost and also increases the likelihood that gamblers will be unable to control spending (Griffiths, 2007a). Due to the fact that scratchcards require no skill and are highly accessible, as well as the rapid event frequency, short pay-out intervals (i.e. there is only a few second's interval between the initial gamble and the winning payment) and psychological rewards, scratchcard gambling can become highly addictive (Griffiths, 1999b). Winnings can be re-gambled almost immediately and there are also few restraints on repeated gambling with scratchcards.

Themed slot machines (e.g. relating to television shows, films, popular board games, video games or celebrities) are an important structural characteristic that can entice people to gamble in the first place. Griffiths (2007c) proposes that familiarity is a very important psychological aspect of why themed slot machines have been more prominent over the last decade and he suggests that familiar themes have the capacity to induce a 'psycho-structural interaction' between the gambler and the gambling activity. This is where the gamblers own psychology interacts with the machine's structural characteristics and produces difference consequences for each person depending upon what the feature means to them personally. The experience of gambling may be more enjoyable because they can easily interact with recognisable images. Familiar themes may have a very persuasive effect and can lead to an increase in the amount spent on them (Griffiths, 2007c).

Sound effects, particularly in slot machines, are gambling inducers (Griffiths & Parke, 2003). For instance, they create an impression of a fun and exciting environment. More importantly, they highlight winning. Music can also heighten psychological arousal or help listeners relax. Little research has been conducted in the effects of background music in gambling environments, however, one study by Dixon, Trigg and Griffiths, (2007) varied the speed of music played to gamblers playing roulette. They found that speed of betting was influenced by musical tempo with faster betting occurring while listening to higher tempo music, but there was no relationship between musical tempo and either the size of the bet or the overall amount spent.

Following on from this, Spenwyn, Barrett and Griffiths (2010) looked at the effects music and light have on gambling behaviour, as measured by risk per spin and speed of bets in online roulette. No effects were found for lighting but musical tempo had a significant main effect on the participant's speed of bets. The results from these studies suggest that background music may not have the potential to effect betting behaviour in individuals in relation to amount of money spent. However, the study only examined virtual roulette and participants were playing on a free version of roulette with only minor incentives and therefore might not be representative of how they may have played if it was with real money. Playing with 'free' money could have affected the risks they took and perhaps the speed in which they placed their bets. Furthermore, these studies focused on non-regular gamblers. Although participants in Spenwyn *et al.*'s (2010) study had all gambled previously, no measure was taken to how often the participant was currently gambling. Regular gamblers or problem gamblers may behave in an entirely different way. Further investigation of background music in gambling environments is needed to determine whether such music maintains or exacerbates gambling behaviour in some individuals.

Light and colour can also affect behavioural patterns in a variety of contexts. Lighting levels can affect performance and arousal levels, and it has been suggested that some colours are associated with certain moods and can affect people's arousal and attitudes (Griffiths & Parke, 2003). However, there has been little research into the differential effects of colour stimulation on gambling behaviour.

1.8.2 Situational characteristics

1.8.2.1 Advertising

The use of advertising can stimulate people to gamble (Griffiths, 2003b). The psychology of ‘gambling advertising’ is important in attracting potential punters. In almost all advertisements there is terminological avoidance in the fact that there is almost no reference to the words ‘gamble’ and ‘gambling’ (Griffiths, 2007c). Instead, clever advertising phrases such as “soon everyone would be a winner, you could be next” can entice players to gamble (Derevensky & Gupta, 2007). McMullen and Miller (2009) examined the messages of gambling advertisements in Canada and found that there was an ‘ethos of winning’ in the commercials. The advertisements entice people with the prospects of huge jackpots, attractive consumer goods and easy wins, showcasing top prize winners, and providing depictions that winning is life changing. McMullen and Miller (2009) believe that these misrepresentations can exploit some of the factors associated with at-risk gambling.

The media also encourage gambling by romanticizing stories about gambling and gamblers, and showing daring heroes thriving on risk, and by giving enormous publicity to game show contestants or gamblers who win substantial prizes (Smith & Abt, 1984). Griffiths (2007c) has suggested that the underlying psychological agenda in both the terminological avoidance in branding and the guilt-reducing statements in advertising appears to be about ‘normalising’ gambling and making it an activity that is socially acceptable and socially condoned. Gambling is now a socially acceptable leisure activity and advertising and branding have also had a ‘softening’ effect on the image of gambling (Griffiths, 2007c).

The constant exposure to gambling advertising has been indirectly connected to the onset of problem gambling. Grant and Kim (2001) found that 46% of problem gamblers reported that television, radio, and billboard advertisements were a trigger to gamble. Additionally Griffiths and Barnes (2008) discovered that 40% of a sample of British young adult online gamblers did so as a result of advertising. A qualitative exploratory study of the impact of gambling advertising on 25 current or past problem gamblers found that a quarter of problem gamblers believed the advertisements had no impact on their problem, half indicated it had a marginal impact, and a fifth reported advertising had a tangible impact on their problem gambling. However, none of the participants considered advertising to be a main cause of their gambling problems (Binde, 2009).

These advertisements appeared to serve as triggers to continue gambling and were perceived to be a deterrent to their decision to gamble less or stop gambling.

Amey (2001) also found that participation in gambling activities and recall of gambling advertising were linked, in that those who gambled more than average reported seeing more gambling advertisements than others did, while those who had few or no gambling activities were less likely to report having seen gambling advertisements. However it could be that those who already have positive attitudes towards gambling pay more attention to gambling advertising and therefore are more likely to recall having seen it. Other studies have found that advertising did not trigger problem gambling (Hodgins & el-Guebaly, 2004; Hodgins & Peden, 2005). It would seem there are no compelling statistics on the direct impact of gambling advertisements on the prevalence of problem gambling, and as Binde (2007) concludes “on the basis of available factors, it can be inferred that advertising indeed increases the prevalence of problem gambling but its effect is less than those of other relevant factors” (p.184). Speed of play, and design characteristics are likely to have more of an impact (Griffiths, 2005a).

1.8.2.2 Celebrity endorsement

Celebrity endorsement is also used by gaming companies to increase the likelihood of someone gambling (Griffiths, 2007c; Griffiths & Parke, 2003). However, a company must carefully evaluate a celebrity’s image and reputation first, because using the wrong celebrity can have adverse consequences (e.g. Billy Connolly promoting the National Lottery caused a decrease in sales because the public found him highly irritating, (Griffiths, 2007c)). Steps need to be taken to make sure the celebrity’s image and reputation matches the needs of the company. Furthermore, Griffiths (2007c) mentions that there are stars who have become celebrities through winning world poker championships (e.g. Howard Lederer) and gamblers will want to have more of a psychological association with these celebrities than those celebrities who just happen to play poker as a hobby. Thus, as McMullan and Miller (2009) conclude, there seems to be increasing evidence that gambling advertisements in the media, celebrity endorsements, and the ‘gambification of sports’ by corporate sponsors are having a powerful effect on young people’s perceptions that gambling is an exciting harmless form of entertainment. Advertising of gambling is a potential public health issue if advertising has a direct or material effect on gambling participation or problem gambling outcomes (Griffiths, 2005a).

1.8.2.3 Accessibility

Access to legalised gambling is an obvious risk factor but ease of access can also be very significant. Casino employees have full access and exposure to gambling compared to the general population and therefore it follows that those with the greatest gambling exposure should experience more health problems than those with less exposure (Shaffer & Korn, 2002). Then again, workers might seek employment in the gaming industry to satisfy their gambling interests. In a study looking at the health risk behaviours of casino employees, (Shaffer, Vander & Hall, 1999) found higher levels of gambling, smoking, drinking and mood disorder in casino employees compared to the general population. Furthermore, an increase in availability of gambling opportunities is likely to lead to an increase in gambling participation. In countries where gambling has become widely available, public attitudes have generally become more accepting of gambling, and gambling participation has become common-place throughout the general adult population (Abbott, Williams & Volberg, 2004). It is widely believed that increased gambling availability, especially of forms that are continuous in nature or involve an element of skill, has led to a rise in the prevalence of problem gambling and less severe problem gambling (Abbott *et al.*, 2004; Walker, 1992).

1.8.3 Summary of the structural and situational characteristics of gambling

A number of risk factors for the development of problem gambling have been examined here. These include: increased accessibility to legalised gambling; ‘continuous’ forms of gambling, i.e. casino games, EGM’s, horse/dog betting, as opposed to other forms that do not permit continuous play (lottery, bingo, pools). Certain types of gambling are more likely to produce gambling addiction than other types (Welte *et al.*, 2004). Those with high event frequency, those that produce a highly variable reinforcement schedule, and those that provide instant feedback are more likely to lead to problem gambling behaviour (Griffiths, 1999a).

1.9 Summary and conclusions

For the majority of people, it would appear that ‘normal’ or ‘social’ gambling is of no danger to most individuals in society because controlling the impulse to gamble is within their personal limits (Griffiths, 1995). However, for a small minority of people, gambling can lead to serious problems that interfere significantly with basic occupational, interpersonal and financial functioning. With the UK Gambling Act 2005

now in force (from 1st September 2007), opportunities to gamble will increase in a multitude of ways, and as research has shown, the prevalence of problem gambling is likely to be increased as the availability of gambling increases (Griffiths, 1999a). It is therefore vital that healthcare professionals are aware of these developments so that they are able to respond appropriately to a potential increase in the number of problem gamblers. This will have implications in terms of treatment and as Griffiths (2003c) makes clear, gambling does not involve the ingestion of a psychoactive substance and therefore makes it a very different kind of addiction from (say) drug addictions, particularly as there are no observable signs or symptoms. He therefore proposes that gambling problems need a specific plan of action of its own.

Griffiths (2003c) recommends that: opportunities to gamble are limited (since increases in accessibility of gambling leads to increases in regular gamblers as well as problem gamblers (Griffiths, 1999a); the minimum age of all forms of gambling is raised to 18 years (this would significantly reduce the number of children who gamble); awareness about gambling is raised among health practitioners and the general public; general and targeted gambling prevention initiatives are set up as well as gambling support initiatives. All these recommendations will lead to problem gambling being fixed in public health policy. By understanding gambling and its potential effects on the public's health, policy makers can minimise the negative results and maximise the positive implications (Korn & Shaffer, 1999). However, despite increasing awareness of the disorder, problem gambling remains largely undiagnosed and untreated, even among high-risk populations such as substance abusers as most problem gamblers do not seek treatment (Petry & Armentano, 1999).

It is vital to understanding prevalence rates of psychiatric disorders in order to establish appropriate intervention services for affected individuals. Additionally, knowledge regarding the comorbidity of problem gambling and other psychiatric conditions is necessary to generate hypotheses regarding the etiology of, and ultimately designing prevention strategies for, problem gambling (Petry, Stinson & Grant, 2005). Gambling is a multifaceted behaviour influenced by contextual factors that cannot be encompassed by any single theoretical perspective, and consequently many factors may come into play in various ways and at different levels of analysis (Griffiths & Delfabbro, 2002). Therefore, a multi-dimensional framework will lead to better understanding of gambling. Environmental, social, psychological and/or biological factors all interact to explain

gambling behaviour. It is probable that gambling acquisition is underpinned by sociological mechanisms and gambling maintenance underpinned by psychological mechanisms (Griffiths, 1999b). A variety of treatments, from a variety of standpoints can therefore be beneficial simultaneously (Griffiths, 2006a). Consideration will now be given to research specifically dealing with internet gambling.

Chapter 2: Interactive gambling technologies

2.1 Internet gambling

2.1.1 An overview of internet gambling

The majority of gambling takes place in licensed, highly regulated venues (Dickerson & O'Connor, 2006). However, there has been a substantial increase in the amount of gambling opportunities offered on the internet in recent years and betting by phone or internet is becoming increasingly popular (Griffiths, 2007a). In 1997 approximately 200 sites existed (Wood & Williams, 2007a). There are now almost 2,300 sites (Online casino city, 2010), ranging from casino games (blackjack, roulette, slots) to sports and pari-mutuel betting, to bingo and lottery sales, to the recent poker phenomenon (Stewart, 2006).

It is clear that the internet has provided new opportunities to gamble, but technology is continuing to provide increasing market opportunities such as more technologically advanced slot machines and video lottery terminals, interactive television, and mobile phone gambling (Griffiths, 2006b). It is also clear that newer forms of gambling (such as internet gambling) are almost exclusively participated in from non-gambling environments such as the home or workplace (Griffiths, 2006b). The expansion of the internet into areas outside the office and home (e.g., cafes, shopping centres and planes) opens up further gambling opportunities for consumers, blurring the distinction between gambling and non-gambling locations (McMillen, 2000). A consequence of this is that regulation of gambling all but disappears when it is done in non-gambling environments (Griffiths, Parke, Wood & Parke, 2006).

In America, the Federal Trade Commission (2007) warned that internet gambling can be addictive; "Internet gambling is a solitary activity where people can gamble uninterrupted and undetected for hours at a time. Gambling in social isolation and using credit to gamble may be risk factors for developing gambling problems". It is well documented that drinking large amounts of alcohol alone is a risk factor for problematic behaviour (Bourgault & Demers, 1997; Cooper, 1994). It would seem that gambling alone is also associated with higher levels of excessive play. Shaffer (2004) reports that these are social behaviours that are most pleasurable within a social context, but engaging in these behaviours alone removes the social context and reduces the impact

of both formal and informal social controls. Moreover, when gambling alone the pace of games played is often much more rapid than games played in a social context as there are no natural limits provided by a group. Therefore the absence of informal social controls could be a risk factor for the development of gambling-related problems.

As opportunities to gamble have increased during the 20th century, gambling research has grown at an exponential rate, particularly since the 1960's (Shaffer, Stanton & Nelson, 2006). However, the majority of this research has focused on pathology, risk-taking, decision-making and addiction. Yet very little empirical research has been carried out exploring internet gambling, despite the rapid increase in this activity in recent years. Although there have been a number of theoretical papers published on the potential changes the internet may make to the gambling activity (Eadington 2004; Griffiths 1999a; 2003b; Griffiths & Parke 2002; Parke & Griffiths, 2004b; Shaffer, 2004; Watson, Liddell, Moore & Eshee, 2004) more research studies are needed into the effects that the internet has on gambling in particular to the situational and structural characteristics of the internet in facilitating gambling behaviour.

2.1.2 Prevalence of internet gambling

It is estimated that in the UK over four million people gamble online everyday (Himes, 2005). Technology has always played a role in the development of gambling practices, as argued extensively by Griffiths, (1999a; 2001; 2003b; 2006c). He argues that new technologies may provide many people with their first exposure to gambling (Griffiths, 2006b) that may be more enticing than previous non-technological forms (Griffiths, 1999a). In the UK there is a substantial amount of gambling advertising, particularly television sponsorship and in public transport areas such as tube stations and major rail stations (Himes, 2005). With aggressive marketing campaigns and an increasingly diverse range of products remote gambling will accelerate and bring gambling to completely new audiences (Hawkswood, 2005).

A prevalence study of internet gambling in Canada (Ialomiteanu & Adlaf, 2001) of 1,294 adults found that 5.3% reported having gambled on the internet during the past 12 months. Although women were more likely to gamble online than males (6.3% vs. 4.3%), the difference was not statistically significant. There were no dominant age, regional, educational, or income differences and the study did not examine any aspects of problem gambling.

The first U.K. prevalence survey on internet gambling (Griffiths, 2001) was carried out in 2001. The results showed that only 24% of the 2,098 random people surveyed were internet users. Not one person gambled regularly on the internet, and only 1% were occasional gamblers (i.e., less than once a week). The data suggested that in no way is internet gambling problematic and/or addictive. However, as Wood, Griffiths and Parke (2007a) point out, this prevalence survey was carried out at a time when internet gambling was in its infancy and the situation has developed considerably since then. In the 2007 British Gambling Prevalence Survey (Wardle *et al.*, 2007), 6% of the population had used the internet to gamble in the past year. Following legislation and regulation of internet gambling in the U.K., prevalence figures revealed that 10.5% of adults surveyed reported participating in online gambling in the past month (Gambling Commission, 2010). The United Kingdom has the highest known rate of internet gambling, and the 2007 (Wardle, Sproston, Orford *et al.*, 2007), and 2010 (Wardle, Moody, Spence *et al.*, 2010) prevalence surveys show that it is increasing.

However, participation in internet gambling worldwide, is still relatively low compared to offline gambling (Wardle *et al.*, 2007; Welte, Barnes, Wieczorek, Tidwell & Parker, 2002; 2004). Nevertheless, there is a growing concern that internet gambling will continue to increase in popularity and attract players because of some unique aspects, such as convenience, anonymity and a greater sense of control (Griffiths, 2003b; Griffiths *et al.*, 2006; Watson *et al.*, 2004; Wood, Williams & Lawton, 2007). Wood and Williams (2009) found the prevalence rate of internet gambling in Canada in 2006/2007 was 2.1%, and this has increased, especially since 2004 (although was still the least common form of gambling among Canadian adult gamblers). Moore (2006) also found that the rate of past year gambling had increased significantly among residents of Oregon from 0.7% in 2001 (Moore, 2001) to 1.9% in 2005 (Moore, 2006). These studies support the notion that internet gambling may be a growing problem.

Additionally, a UK national survey (MORI Social Research Institute, 2006) of over 8,000 12 to 15 year olds was conducted to examine under 16 year olds attitudes and behaviour towards the National Lottery. Part of the national study examined remote gambling in relation to use of National Lottery products online. The results found that adolescents can and do gamble on the internet and other remote media (Griffiths & Wood, 2007) and online gambling was higher among those who said their parents

approve of young people gambling. Problem gamblers were more likely than social gamblers to have played games online in the past week. This study highlights important areas and it is likely that adolescent gambling on the internet and other remote media will become an issue of increasing concern over the next few years (Griffiths, 2003b), especially considering many adolescents are technologically proficient and use the internet and mobile phones regularly. There are multiple features on the internet to entice youth to gamble online. The colourful, fast-paced video-game like qualities, their knowledge and sophistication in the use of the internet, their enjoyment of gambling and the ease of accessibility provide an ideal venue for youth to relieve boredom and provide an exhilarating form of entertainment (Derevensky & Gupta, 2007).

2.1.3 Rate of problem gambling among internet gamblers

A study in the US on gambling behaviours among 389 University-based medical and dental patients (Ladd & Petry, 2002b) found that all respondents had gambled in their lifetimes, and 70% had gambled in the past 2 months. Of the respondents, 8% reported having gambled on the internet at some point in their lives, and 3.6% engaged in internet gambling weekly. Mean scores on the South Oaks Gambling Screen (SOGS) showed that the internet gamblers had significantly higher scores than the non-internet gamblers. Ladd and Petry (2002b) concluded that internet gamblers are more likely to have a gambling problem than non-internet gamblers. However, it is worth noting that the participants were a self-selected sample and therefore the results may not be representative of gamblers in general.

An internet-based survey in the US (Wood & Williams, 2007b) was administered to 1,920 internet gamblers, of which worryingly, almost half (42.7%) were classified as problem gamblers. The internet gamblers came from a highly diverse array of ethnic, religious, educational, marital, gender and age backgrounds. Slightly more males were internet gamblers and the majority were under the age of 35 years. The most preferred games were blackjack and slot machines, by a fairly large margin. The very high rate of problem gambling found in the sample is concerning. Wood and Williams (2007b) suggest that the rate of problem gambling among internet gamblers may be 10 times higher than the rate among the general population. However, to date, only a small number of studies examining this difference have been published and further research is needed to verify if there is a difference between internet gamblers and non-internet gamblers. Future research also needs to address the direction of the apparent link

between problem gambling and internet gambling. Internet gambling may be more likely to lead to gambling problems or problem gamblers may be attracted to the internet as a more accessible opportunity. In a more recent prevalence study of gambling, Wood and Williams (2009) suggest that the rate of problem gambling may be 3 to 4 times higher in internet gamblers compared to non-internet gamblers.

One study has examined some of the differences between internet gamblers and non-internet gamblers (Griffiths & Barnes, 2008). They found that internet gamblers were significantly more likely to be problem gamblers and males were significantly more likely to be internet gamblers and internet problem gamblers. Furthermore, internet gamblers spent significantly more time and money gambling than non-internet gamblers. As the authors point out, this could be because problem gamblers use a wider range of media in which to gamble, or alternatively the internet could make the gambling activity more problematic for them.

2.1.4 Online poker

As online poker is one of the most popular forms of gambling, it is speculated that it may be an issue for concern regarding problematic gambling behaviour. A study looking at online poker playing in a student sample (Wood *et al.*, 2007a) attempted to look at motivators for participation, monies won and lost, levels of problem gambling, and predictors of problematic play. From the self-selected sample of student online poker players (n = 422), the results showed that online poker playing was undertaken at least twice per week by a third of the participants. A total of 18% were defined as a problem gambler using the DSM-IV criteria (APA, 1994). It is also interesting to note that most players viewed online poker playing as a game of skill rather than either mostly chance based or a combination of both skill and chance. Gambling to win money was the most common reason claimed by participants for playing poker across all categories of player (i.e., social gamblers to problem gamblers). It is likely that students have more familiarity with using the internet than the general population, and it is also the case that University students in the UK are much more likely to have internet access at home than the general population (Niemz, Griffiths & Banyard, 2005). Therefore, exposure to online poker playing may be relatively frequent compared to non-student populations. Furthermore, Wood and Williams (2009) found that student status was statistically predictive on internet gambling behaviour.

Factors such as accessibility and financial motivation may mean that the acquisition of online poker playing is more likely among a student population than the general population (Wood *et al.*, 2007a). The results also demonstrated that problem gambling was best predicted by negative mood states after playing, gender swapping whilst playing, and playing to escape from problems. Wood *et al.* (2007a) concluded that greater awareness needs to be promoted about the dangers that online poker playing can pose for individuals especially when relied upon to alter mood states and/or escape from problems. Internet gamblers rate flexibility, ease of access, and 24-hour availability as very beneficial to internet gambling (Griffiths & Barnes, 2008; Wood *et al.*, 2007a). However, these benefits can lead to sustained periods of gambling and in some people may lead to problem gambling.

2.2 Social impact of internet gambling

With the relaxation of gambling legislation, the proliferation of gaming establishments and increased opportunity to gamble may lead to an increase in the number of people who experience gambling problems (Griffiths, 1999a; 2006b). Research in other countries has shown that where there is an increase in the accessibility of gambling, there is an increase in the number of regular gamblers and the number of problem gamblers (Griffiths, 2003c). Furthermore, with technological advance, the internet is providing convenience gambling (Griffiths, 2006d). Concern about the safety of internet gambling has led to speculation that there is a need for technological interventions designed to prevent the development of gambling-related problems or reduce gambling-related harm that might be associated with internet gambling (Peller, LaPlante & Shaffer, 2008). The internet is available 24/7. Individuals can participate from the comfort of their own home and with the affordability, anonymity and convenience, this will have implications for the social impact of internet gambling and it is likely to continue to increase in the next few years (Griffiths, 2003b; 2006d; Griffiths & Parke, 2002).

2.2.1 Protection of the vulnerable

In offline gambling, vulnerable individuals (e.g. adolescents, problem gamblers, drug/alcohol abusers, the learning impaired, etc.) are often prevented from gambling by responsible members of the gaming industry (Griffiths & Parke, 2002). The term 'responsible gambling' has been used to describe gambling at recreational levels, however, a clear definition of this term is lacking (Blaszczynski, Ladouceur & Shaffer,

2004). Determining an acceptable level of harm will undoubtedly vary from person to person. Clearly further research is needed to determine exactly what 'responsible gambling' is, particularly as the number of internet gambling sites is increasing at a rapid pace. Furthermore, with the introduction of the UK Gambling Act 2005, the dilemma now becomes how to ensure the future of internet gambling is regulated, controlled and socially responsible (Smeaton & Griffiths, 2004).

Blaszczynski, Collins, Fong *et al.* (2010) have put forward a set of basic principles and minimal requirements that should form the basis for every responsible gambling programme. Such things include: initiating population-based education; initiating staff training; providing information on help numbers, rehabilitation and counselling treatment programmes; avoid marketing to underage populations and self-excluders; display warning signs about possible adverse consequences associated with excessive gambling; tighter enforcement procedures to restrict underage gambling; restricting the sale of alcohol to minors, to patrons while gambling and to intoxicated persons; make available and accessible self-exclusion options; and modify structural and situational features that might contribute to excessive gambling. However, no scientific research has documented the extent to which offline gambling operators have implemented these components and their effectiveness.

In the context of responsible gambling, people also need to be aware of the dangers of internet gambling, which may put them at risk of developing gambling problems (Blaszczynski *et al.*, 2004). Griffiths and Parke (2002) suggest a number of serious concerns that regulatory authorities and internet gambling service providers will have to take on board, such as, how can you be sure that adolescents are not accessing internet gambling sites by using a parent's credit card? There is no way of checking whether a person is under the influence of alcohol or drugs when they use an internet gambling website, and there is no way of knowing whether a person is a problem gambler when they access the websites.

2.2.2 Additional impacts of internet gambling

Additional impacts of internet gambling include gambling in the workplace; and the effect of using electronic money. As previously mentioned, the internet is now increasingly available in the workplace. Many organisations have unlimited access for all employees and often people can participate in online gambling without arousing

suspicion among management or co-workers (Griffiths *et al.*, 2006). Work efficiency and productivity will consequently be affected and effective gambling policies for the working environment will need to be implemented by employers (Griffiths, 2002). Furthermore it can be hard for employers to spot problem gamblers as it has been commonly described as a ‘hidden’ addiction (Griffiths, 2002).

Using electronic cash (e-cash) may reduce the psychological value of money and may lead to a “suspension of judgment” (Griffiths, 1993), thus suggesting that this structural characteristic temporarily disrupts the gambler’s financial value system and potentially stimulates further gambling. It is much easier to gamble with ‘chips’ or tokens as they decrease the psychological value of money to be gambled (Griffiths *et al.*, 2006). This is why many casinos use ‘chips’ and tokens, and it is thought that people will also gamble more using e-cash than they would with real cash (Griffiths *et al.*, 2006).

2.3 Unscrupulous operators

Many fears about the rise of internet gambling concern unscrupulous practices operated by some internet gambling sites (Griffiths & Parke, 2002). Issues of concern include (i) embedding, (ii) circle jerks and ‘pop-ups’, and (iii) online customer tracking (Griffiths *et al.*, 2006).

Embedding is a seemingly common practice and is the hidden embedding of certain words on an internet gambling site’s web page through the use of meta-tags. A meta-tag is a command hidden in the web page to help search engines categorise sites. Griffiths and Parke (2002) note that some internet gambling sites appear to use the word *compulsive gambling* embedded in their web page, so their site will come up whenever someone searches for a page using that term. This is a very unscrupulous practice and anyone looking for help for problem gambling will get gambling sites popping up in front of them, thus tempting them to continue gambling.

Circle jerks are another unscrupulous tactic used by gambling sites. If someone accesses a particular type of site and tries to get out of it, another box offering a similar type of service will usually pop up. Sites that use circle jerks hope that a person will be tempted to access their service. However, a worrying concern is that internet gambling sites can collect other sorts of data about the gambler, and internet gamblers can provide tracking data that can be used to compile customer profiles (Griffiths *et al.*, 2006). Others in the

gambling industry are then able to tell exactly how customers are spending their time (i.e., which games they are gambling on; how long for; and how much money they are spending etc.). This information can help in the retention of customers, and can also link up with existing customer databases and operating loyalty schemes (Griffiths *et al.*, 2006). Thus gaming companies can tailor their service to the customer's known interests, and worryingly, unscrupulous operators will be able to entice known problem gamblers back onto their premises with tailored freebies.

2.4 Mobile phone gambling and interactive television gambling

Other forms of interactive gambling technology exist, and include mobile phone gambling and interactive television gambling. With the advent of mobile phone gambling, it seems convenience gambling has another form (Griffiths, 2007d). Gamblers are able to place bets whenever they have a few minutes spare without having to worry about getting to a betting shop or finding access to the internet. It may also make 'impulse betting' easier (Griffiths, 2007d). However, with the increase in mobile phone gambling, there is the potential for an increase in problem gambling, as is the case with internet gambling (Griffiths, 2006c).

Gambling through interactive television has now made it possible to gamble on sporting events such as horse racing and football, to place bets on casino games such as blackjack and poker, using a television remote control, and to phone premium-rate telephone lines to place a bet or participate in a skill game such as puzzles, word games and trivia questions. With the advent of digital television further gambling opportunities present themselves. A report looking at consumer responses to interactive digital television (iDTV; Mercier & Barwise, 2004) found that the two interactive applications showing significant growth were betting and digital radio. The development of digital television has presented the prospect of interactive sports betting and gaming through television broadcasting. McMillen (2000) makes the point that while internet gambling will appeal to a limited and select market in the foreseeable future, interactive gambling via digital TV will have wide appeal and be accessible to all income groups. Furthermore, Brindley (1999) notes that gambling via interactive technology is already underpinned by two changes in consumer behaviour. Firstly, access to and familiarity with interactive technology is becoming increasingly more common, and secondly, the UK National Lottery has already changed the way the gambling market operates, resulting in mass participation in the gambling market.

There is much research to be done examining interactive gambling technologies, including mobile phone gambling and interactive television gambling, however this is beyond the scope of this thesis. The research carried out for this thesis will focus on internet gambling.

2.5 Structural and situational characteristics of internet gambling technologies

The structural characteristics of the gambling activity itself (i.e., features which manufacturers design into their products) might promote addictive tendencies (Griffiths, 2002). Situational characteristics are those features that get people to gamble in the first place and are primarily features of the environment. These can include macro features of the wider environment (such as location, the number of gambling venues in a specified area, legislative membership requirements, etc.), as well as micro (internal) features of the gambling venue (décor, heating, lighting, etc.) (Griffiths & Parke, 2003). Structural characteristics are those features of the gambling activity itself that are responsible for reinforcement and may satisfy gamblers' needs and facilitate continual and sometimes excessive gambling (e.g., event frequency, jackpot size, near miss features, etc.) (Griffiths, 1999a). The potentially addictive structural characteristics of gambling activities can be manipulated through the technological advancements to increase the appeal and arousal of the games (Griffiths *et al.*, 2006).

The increased use of technology in gambling has decreased the fundamentally social nature of gambling to an activity that is essentially asocial (Griffiths, 2006b). Research has also shown that problem gamblers are more likely to be those playing on their own (Griffiths, 1995), and therefore gambling in a social setting could potentially provide some kind of "safety net" against problem gambling (Griffiths, 2006b). This shift from social to asocial forms of gambling is likely to continue increasing and therefore as gambling becomes more technological, gambling problems may increase due to its asocial nature (Griffiths, 2006b).

2.5.1 Potentially addictive features of internet gambling

The literature regarding the structural and situational characteristics of internet gambling will be examined in much more detail in Chapter 4. But briefly, the factors which may make the internet more attractive and potentially addictive are summarised here. These include anonymity, convenience, escape, dissociation/immersion,

accessibility, event frequency, interactivity, disinhibition, simulation, and asociability (Griffiths, 2003b; 2006b).

2.5.1.1 Accessibility and affordability

Internet access is now easily available from the home and/or the workplace, and increased accessibility may lead to increased problems. People no longer have to worry about time constraints or travel requirements. With reductions in time required to select, place wagers and collect winnings, gambling appears more viable as social and occupational commitments are not necessarily compromised (Griffiths, 2000a). The internet is also becoming cheaper much more affordable. A number of locations now offer free internet access (e.g., libraries, GP surgeries, schools, universities, and the workplace) and therefore removing affordability as a primary barrier to engaging in online gambling (Griffiths *et al.*, 2006).

2.5.1.2 Anonymity

The anonymity of the internet means that the fear of stigma is removed and social barriers to gambling may be reduced (Griffiths, 2006b). There are also no opportunities to judge facial expressions, signs of insincerity or disapproval, and for gambling activities this may be particularly beneficial when losing as no-one will see the face of the loser (Griffiths *et al.*, 2006). Anonymity may also reduce social barriers to engaging in skill-based gambling activities such as poker which is relatively complex and requires social etiquette. As the individual's identity is concealed the potential discomfort of committing a social faux-pas in the gambling environment is removed (Griffiths, 2000a).

2.5.1.3 Convenience

Internet gambling is providing convenience gambling. Online gambling usually occurs in the familiar and comfortable environment of home or workplace thus reducing the feeling of risk and possibly allowing more adventurous behaviours (Griffiths *et al.*, 2006). Not having to move from their home or their workplace may be of great benefit to gamblers.

2.5.1.4 Escape

The experience of internet gambling itself may be reinforced through a subjectively and/or objectively experienced “high” (Griffiths *et al.*, 2006). The mood modifying experience has the potential to provide an emotional or mental escape (Griffiths *et al.*, 2006). People also report gambling to escape stresses and problems in their lives (Griffiths, 2006b). Gambling to escape is likely to be the primary motivator for problem gamblers continued excessive gambling (Wood & Griffiths, 2007a).

2.5.1.5 Immersion/dissociation

The internet can provide feelings of dissociation and immersion and may include feelings such as losing track of time, feeling like you’re someone else, blacking out, not recalling how you got somewhere or what you did, and being in a trance like state (Griffiths *et al.*, 2006). These feelings when participating in internet gambling may lead to longer play because the psychological feelings of being in an immersive or dissociative state are reinforcing. Research has shown that playing video games can lead to experiencing dissociative states and loss of time (Wood, Griffiths & Parke, 2007b; Wood, Gupta, Derevensky & Griffiths 2004). As online gambling uses much of the same structural characteristics as video games (Wood, Griffiths, Chappell & Davies, 2004) the potential for online gambling to facilitate dissociative experiences may be far greater than has been the case for traditional forms of gambling (Griffiths *et al.*, 2006).

2.5.1.6 Disinhibition

The internet clearly makes people less inhibited and users will appear to open up more quickly and reveal themselves emotionally much faster online (Griffiths *et al.*, 2006). Being in a disinhibited state may lead the gambler to spend more money (Griffiths *et al.*, 2006).

2.5.1.7 Event frequency

A structural characteristic designed and implemented by the gaming operator is the event frequency of the gambling activity (Griffiths *et al.*, 2006). Gambling activities that offer outcomes every few seconds or minutes (e.g., slot machines) are likely to cause greater problems than activities with less frequent outcomes (e.g. weekly lotteries). The event frequency on internet activities can be very rapid, particularly if the gambler is subscribed or visits several sites (Griffiths, 2000a). Because of technological

developments, poker gamblers can participate in several games simultaneously, and with reduced time limits for decision-making in comparison to traditional poker games (Griffiths *et al.*, 2006).

2.5.1.8 Interactivity

The interactivity of the internet may be psychologically rewarding, and the increased personal involvement on a gambling activity can increase the illusion of control which may in turn facilitate increased gambling (Griffiths, 2006b).

2.5.1.9 Simulation

Many online gambling sites have a practice mode format, where someone can place a pretend bet to learn about the procedure of gambling on that site. No ‘real’ money is bet so it cannot be regarded as gambling, however, it can be accessed by minors and therefore possibly attract underage players into gambling. Furthermore, the practice modes may build self-efficacy and potentially increase perceptions of control in determining gambling outcomes and motivate players to part with their real cash (Griffiths *et al.*, 2006).

2.5.1.10 Asociability

As mentioned earlier, one of the consequences of internet gambling has been to reduce the social nature of gambling to an activity that is essentially asocial. Those who experience problems are more likely to be those playing on their own. It could be speculated that as gambling becomes more technological, gambling problems will increase due to its asocial nature (Griffiths *et al.*, 2006). However, it may also be the case that the internet provides a social outlet that some people would otherwise not have, e.g., unemployed people and retired people (Griffiths *et al.*, 2006). Furthermore, an increasing number of online gambling websites are providing a customer forum to facilitate peer interaction and thus increase the social element of the game (Griffiths *et al.*, 2006).

2.5.2 Summary of the structural and situational characteristics of internet gambling

Griffiths & Barnes (2008) suggest that the structural and situational characteristics of internet gambling may be having a negative psychosocial impact on internet gambling

behaviour. They suggest this is due to the increased number of gambling opportunities, convenience, 24 hour access and flexibility, increased event frequencies, smaller intervals between gamblers, instant reinforcements, and the ability to forget gambling losses by gambling again immediately.

Griffiths (2006b) predicts that there are further specific developments that are likely to facilitate the uptake of remote gambling services. These include: (i) sophisticated gaming software, (ii) integrated e-cash systems, (iii) multi-lingual sites, (iv) increased realism (e.g., “real” gambling via webcams), (v) live remote wagering (for both gambling alone and gambling with others), (vi) improving customer care systems, and (vii) inter-gambler competition. These factors appear to be important in the attraction of internet gambling.

Given the fact that the internet can be addictive itself (Griffiths, 2000b; Beard, 2005; Wieland, 2005); particularly for adolescents (Ferraro, Caci, D’Amico & Di Blasi 2007), and what is already known about problem gambling, is it possible that internet gambling could be doubly addictive? Research suggests that this is not the case (Griffiths, 2006d). The internet appears to be just a medium to engage in the behaviour of choice. However, Griffiths *et al.* (2006) suggest that the internet may facilitate social gamblers who use the internet (rather than internet users per se) to gamble more excessively than they would have done offline. There is a debate over whether internet addiction should be classed as a psychiatric disorder in its own right, or whether internet addiction sufferer’s are actually dependent on specific online activities such as gambling, shopping or pornography (Griffiths & Parke, 2002).

2.6 Conclusions

Gambling results from an interaction between many factors, including the person’s biological and/or genetic predisposition, their psychological constitution, their social environment, and the nature of the activity itself (Griffiths, 2002). However, it could be argued that technology and technological advance can be important contributory factors (Griffiths, 2006c). Undoubtedly, technology will continue to be a factor in the development of gambling practices. The instantaneous results offered by interactive services may stimulate gambling activity (Brindley, 1999). By looking at the technological components in gambling activities, it seems that situational characteristics impact most on acquisition and structural characteristics impact most on development

and maintenance (Griffiths *et al.*, 2006). Accessibility of the activity and event frequency appear to be the most important of these factors (Griffiths *et al.*, 2006).

The increased use of technology in gambling activities has led to an increase in gambling coming out of gambling environments, increased sociability in gambling, and increased access and opportunity to gamble (Griffiths, 2006b). If interactive gambling develops as a collective family activity, it could mean that children will be exposed to gambling activity in an unprecedented way (Brindley, 1999). However, there is no research that indicates a cause and effect, such that internet gambling results in more problem gamblers. It could be that individuals with gambling problems are drawn to gambling on the internet because of a wide variety of features and their structural characteristics (Derevensky & Gupta, 2007).

2.7 Aims

Given that there is very little empirical information about internet gambling behaviour and characteristics of problematic internet gambling, it is not possible to say with confidence that the characteristics associated with problematic gambling behaviour in land-based gambling activities apply to online gambling behaviour. Although some characteristics might easily be applied to online gambling, the nature of internet gambling is sufficiently distinct from land based gambling to suggest that many characteristics will not apply, and many unique characteristics associated with internet gambling might exist.

Therefore, the aim of this thesis was to develop an understanding of internet gambling, particularly in terms of the psychological implications of the design of gambling websites, and also the motivations and inhibiting factors for gambling online and an overview of the demographics of internet gamblers. This research essentially aimed to explore internet gambling using a mixed methods approach, incorporating a large scale scoping study, in-depth interviews with internet gamblers, offline gamblers and non-gamblers (ranging from non-problem to problem gamblers), and a comprehensive online survey attracting participants world wide, to uncover internet gambling behaviour.

The main objectives were to establish:

- 1) What makes internet gambling potentially addictive?

- 2) How is internet gambling currently located, accessed, and utilised by players?
- 3) What are the salient structural and situational characteristics of internet gambling and how do they impact (psychologically and socially) on peoples' lives?

The objective of this thesis was to address these aims through three stages of linked research and to advance explanatory theory in the area of problem gambling. Through this research it has been possible to indicate which of the identified factors are most salient to problem gamblers, as well as social gamblers, and to differentiate specific sub-sets of problem gambling on specific activities.

Chapter 3: Methodology

3.1 Chapter overview

The aims of this thesis are to examine what makes internet gambling potentially addictive and how is it located, accessed and utilised by players, and to examine what the structural and situational characteristics of internet gambling are and how these impact psychologically and socially on people's lives. A mixed methods approach has been adopted. A scoping study was conducted first to review the current literature and "grey" literature in order to gain a better understanding of the impact of structural and situational characteristics of internet gambling on the behaviour of vulnerable players. The second study involved in-depth semi-structured qualitative interviews with non-gamblers, offline gamblers and online gamblers (ranging from no gambling problem to problem gambling behaviour as well as professional gamblers) to highlight attitudes and views towards internet gambling and to uncover motivating factors for engaging in internet gambling, as well as highlighting any differences between different groups of people. The third study was an online quantitative survey to empirically test focused research questions produced from Studies 1 and 2 of the thesis to a much larger sample. A description will now follow of the theoretical and methodological debates concerning quantitative, qualitative, and 'mixed method' paradigms and the rationale behind using the 'mixed method' approach for this study, in particular the use of triangulation.

3.2 Differences between quantitative and qualitative research

The quantitative-qualitative debate has been unfolding for several decades now and has evolved from one about the incompatibility of quantitative and qualitative techniques and procedures to one about the incompatibility of the more fundamental epistemological assumptions of quantitative and qualitative (positivist and interpretivist) "paradigms" (Howe, 1992). Quantitative research involves describing everything in the psychological world according to some kind of numerical system, whereas qualitative research is often defined only in opposition to quantitative research, i.e., it does not involve statistics or does not rely on the objectivity that supports the quantitative approach (McQueen & Knussen, 2006).

Quantitative methodology is routinely depicted as an approach to the conduct of social research that applies a natural science, and in particular a positivist, approach to social

phenomena (Bryman, 1984). Qualitative research is deemed to be much more fluid and flexible in that it emphasises discovering novel or unanticipated findings and the possibility of altering research plans in response to such unexpected occurrences (Glaser & Strauss, 1967). A qualitative method draws up an interpretive paradigm where there are multiple truths regarding the social world and the researcher is encouraged to be on the same plane as the researched in an effort to promote a co-construction of meaning (Hesse-Biber & Leavy, 2006). Qualitative research has been defined as “the interpretative study of a specified issue or problem in which the researcher is central to the sense that is made” (Bannister, Burman, Parker, Taylor & Tindall, 1994, p.2). Therefore, qualitative research relies on the skills and abilities of the researcher in a way that is not normally acknowledged or expected in quantitative research (McQueen & Knussen, 2006) and can be much more time consuming. In qualitative research the researchers must use themselves as the instrument, attending to their own cultural assumptions as well as to the data; while in quantitative research the instrument is a pre-determined tool which allows for much less flexibility, imaginative input and reflexivity (Brannen, 1992).

The underlying belief of quantitative research is that precision can only be achieved by reducing aspects of our universe to a common numerical system, to allow comparisons to be made and identify differences among individuals, groups and experimental conditions (McQueen & Knussen, 2006). The segregation between qualitative and quantitative methods are not as fixed as they might appear, and in fact the two approaches need not be in direct opposition to one another. The two approaches can happily coexist, or even overlap, within the same study (Bryman, 1992).

3.3 Philosophical assumptions

In mixed methods research, pragmatism is typically the adopted worldview. This focuses on the consequences of research, on the primary importance of the question asked rather than the methods, and multiple methods of data collection inform the problems under study (Creswell & Plano-Clark, 2007). As a philosophical underpinning for mixed methods studies, Tashakkori and Teddlie (1998), and Morgan (2007) convey its importance for focusing attention on the research problem in social science research and then using pluralistic approaches to obtain knowledge about the problem. Pragmatism provides a philosophical basis for mixed methods research (Cherryholmes, 1992; Morgan, 2007; Creswell, 2009):

- Inquirers draw liberally from both quantitative and qualitative assumptions.
- Researchers are free to choose the methods, techniques, and procedures of research that best meet their needs and purposes.
- Pragmatists do not see the world as an absolute unity; mixed methods researchers look to many approaches for collecting and analysing data rather than subscribing to only one way.
- Mixed methods researchers need to establish a purpose for their mixing, a rationale for the reasons why quantitative and qualitative data need to be mixed.
- Pragmatists agree that research occurs in social, historical, political and other contexts, thus mixed methods studies may include a postmodern turn that is reflective of social justice and political aims.

For mixed methods research pragmatism permits multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis (Creswell, 2009).

3.4 ‘Mixed-methods’ research

The concept of mixing different methods originated from Campbell and Fisk (1959) when they used multimethods to study validity of psychological traits. This encouraged others to employ a multimethod matrix to examine multiple approaches to data collection. Recognising that all methods have limitations, researchers felt that biases inherent in any single method could neutralise or cancel the biases of other methods (Creswell, 2009).

Mixed methods research is now defined as ‘the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study’ (Johnson & Onwuegbuzie, 2004). The basic premise of mixed methods is that the combination of quantitative and qualitative approaches provides a better understanding of research problems than either approach alone (Creswell & Plano-Clark, 2007). Mixed methods research provides strengths that offset the weaknesses of both quantitative and qualitative research and this has been the historical arguments for the last 25 years (Jick, 1979). The argument goes that quantitative research is weak in understanding the context or setting in which people talk – something seen as a strength in qualitative research. However, qualitative research is seen as deficient because of the personal interpretations made by the

researcher and the difficulty in generalising the findings because of the limited number of participants studied. Creswell and Plano-Clark (2007) also suggest that mixed methods research offers the advantage that researchers are able to use all of the types of tools of data collection available rather than just those typically associated with qualitative or quantitative research.

Furthermore, quantitative methods can have high levels of ‘internal validity’ as a result of using precise, reliable, replicable measures and samples and tightly controlled experimental conditions, whereas qualitative methods may have higher ‘external validity’ as a result of sacrificing precision and control in favour of richer data collection and interpretation of data in context (Yardley & Bishop, 2008). Therefore, combining the internal validity of quantitative methods with the external validity of qualitative research can thus be a very productive way of mixing methods.

A mixed methods approach is also an attempt to legitimate the use of multiple approaches in answering research questions, rather than restricting or constraining researchers’ choice as it rejects rigidity (Johnson & Onwuegbuzie, 2004). It should not be viewed as limiting, rather it is inclusive, pluralistic, and complementary, and it suggests that researchers take an eclectic approach to method selection and the thinking about and conduct of research (Johnson & Onwuegbuzie, 2004). A researchers paradigmatic viewpoint may even shift over the course of any given research project (Hesse-Biber & Leavy, 2006).

However the mixed method approach demands that the researcher specifies the particular aims of each method, the nature of the data that is expected to result, and how the data relate to theory (Brannen, 1992). If findings from different methods conflict with one another they ought to be addressed by the researchers in their interpretation of the data and in the linkages they make between methods, data and theory. Brannen (1992) also suggests that discrepancies should prompt the researcher to probe particular issues in greater depth, which may lead to new theories and more fruitful areas of enquiry.

3.4.1 Why use mixed methods research?

When only one approach to research (quantitative or qualitative) is inadequate alone to address the research problem, mixed methods research is preferred. The combination of

qualitative and quantitative data provides a more complete picture by noting trends and generalisations as well as in-depth knowledge of participants' perspectives (Creswell & Plano-Clark, 2007). "By using a combination of qualitative and quantitative data gathering techniques, investigators can clarify subtleties, cross-validate findings, and inform efforts to plan, implement, and evaluate intervention strategies" (Black & Ricardo, 1994, p. 1066).

A mixed methods design is also preferred when a qualitative design can be enhanced by quantitative data; or when qualitative research is used to explore a problem but further quantitative research is needed to understand the problem. Furthermore, a mixed methods approach can encourage quantitative and qualitative researchers to collaborate, as dividing between quantitative and qualitative only serves to narrow the approaches and collaboration to inquiry (Creswell & Plano Clark, 2007).

3.4.2 Conducting mixed methods research

There are three main strategies of inquiry for mixed methods research: concurrent mixed methods; transformative mixed methods; and sequential mixed methods (Creswell, 2009). Concurrent mixed methods procedures are those in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. Transformative mixed methods procedures are those in which the researcher uses a theoretical lens as an overarching perspective within a design that contains both quantitative and qualitative data. Sequential mixed methods procedures are those in which the researcher seeks to elaborate on or expand on the findings of one method with another.

Morgan (1998) suggests there are four possible mixed-methods research designs based on the sequencing (time ordering) as well as relative importance (priority) of each method. The following table shows the four mixed-methods designs offered by Morgan (1998).

Table 3: Combining Qualitative and Quantitative Methods

Design 1. qual followed by QUANT
Design 2. quant followed by QUAL
Design 3. QUANT followed by qual
Design 4. QUAL followed by quant
SOURCE: Adapted from Morgan (1998)
NOTE: All lower case means secondary method and all upper case denotes primary method

The findings from one type of study can be checked against the findings from a different study, e.g. the results of a qualitative study might be checked against a quantitative study, with the aim to generally enhance the validity of findings (Bryman, 1992). Qualitative research can help to provide background information on context and subjects; it may act as a source of hypotheses; or it could aid scale construction (Bryman, 1992). The sequential mixed methods approach will be adopted for thesis: a main qualitative interview study will facilitate the quantitative research.

Greene, Caracelli and Graham (1989) propose that there are five major purposes for conducting mixed methods research:

- 1 Triangulation (seeking convergence and corroboration of results from the different methods)
- 2 Complementarity (seeking elaboration, enhancement, illustration and clarification of the results from one method with results from the other method)
- 3 Development (using the results from one method to help develop or inform the other method)
- 4 Initiation (discovering paradoxes and contradictions that lead to a reframing of the research question)
- 5 Expansion (seeking to extend the breadth and range of inquiry by using different methods for different inquiry components).

One of the main reasons for using a mixed methods approach for this thesis was to use findings from the qualitative interview study to inform the development of the online questionnaire study.

3.4.3 Triangulation

The context in which the integration of quantitative and qualitative research is most frequently encountered is in terms of triangulation (Bryman, 1992). Cohen, Manion and Morrison (2007) define triangulation as an *“attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint”* (p. 141). Triangulation is the use of three research methods and is one of the reasons for mixing methods (Creswell, 2009) as is the case for this study. Triangulation synthesizes data from multiple sources and tries to pinpoint the value of a phenomenon more accurately by sighting in on it from different methodological viewpoints. By examining information collected by different methods, by different groups and in different populations, findings can be corroborated across data sets, reducing the impact of potential biases that can exist in a single study. The core premise of triangulation as a design strategy is that all methods have inherent biases and limitation, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results (Greene, Caracelli & Graham, 1989). Therefore if two or more methods are used and the results corroborate each other then the validity of findings is enhanced.

Triangulation combines information from quantitative and qualitative studies, and as Denzin (1970) argues, can allow a way of examining the same research problem and therefore enhancing claims concerning the validity of the conclusions that could be reached about the data.

3.5 Using the internet for research

Study 1 and Study 3 used the internet for data collection, but in different ways. For study 1, online gambling websites were examined to identify any additional structural and situational characteristics of internet gambling that have not been identified in the literature in order to develop a comprehensive list of all structural and situational characteristics and the impact these may have on the behaviour of vulnerable players. Study 3 involved conducting an online survey examining internet gamblers attitudes and behaviours towards gambling and features of gambling websites.

The main advantages of conducting research and collecting data via the internet have been summarised by Reips (2007; for full discussions, see Birnbaum, 2004a; Reips 2000, 2002). These include; the possibility to test large numbers of participants quickly;

opportunity to recruit large heterogeneous samples and people with rare characteristics (Schmidt, 1997); and web-based methods are more cost effective in administration, time, space and labour in comparison with laboratory research. Web-based methods are valid (e.g., Krantz and Dalal, 2000), and have even been found to produce higher quality data than laboratory studies (Buchanan and Smith, 1999; Reips 2000; Birnbaum, 2004a). Other benefits of web-based methods are: the ease of access for participants (bringing the experiment to the participant instead of the opposite); the ease of access to participants from different cultures, given internet access and the availability of the Web experiment in the respective languages; truly voluntary participation (unless participants are required to visit the website); detectability of confounding with motivational aspects of study participation; the better generalisability of findings to the general population (e.g., Brenner, 2002; Horswill and Coster, 2001); the avoidance of time constraints; the simultaneous participation of large numbers of participants is possible; the reduction of experimenter effects (even in automated computer-based assessments there is often some kind of personal contact, but this is not so in most web-based assessments); and the reduction of demand characteristics. In terms of using the internet for gambling research, the advantages have been summarised by Griffiths (2010a):

- The internet can be a useful medium in eliciting rich and detailed data in sensitive areas such as gambling addictions.
- The internet has a disinhibiting effect on users and reduces social desirability which may lead to increased levels of honesty and therefore higher validity in the case of self-report.
- It provides access to individuals who may not have taken part in the research if it was offline.
- The internet has a potentially global pool of participants, therefore researchers are able to study extreme and uncommon behaviours (such as addicted individuals) as well as make cost effective cross-cultural comparisons.
- It can aid participant recruitment through advertising on lots of different bulletin boards and websites (e.g., gambling chat rooms, gambling forums).

Disadvantages of online research include issues such as reliability, validity, self-selecting sample and generalisability, although it could be argued that these are just as likely in offline environments (Griffiths, 2010a). However, there may be different types of problems with online research, when compared to traditional offline research, such as

lack of research control, lack of knowledge about hardware/software variability; and lack of knowledge about participant behaviour (Griffiths & Whitty, 2010). It can be difficult to verify that the participants are actually who they say they are. A further disadvantage of internet research is that it requires participants have access to a computer and the internet, but since the population for this study is internet gamblers this was not a concern.

3.6 An outline of the studies

3.6.1 Study 1 – scoping study

As the thesis involves a mixed method approach in order to triangulate the data, the first study conducted aimed to ‘scope’ the current empirical literature and “grey” literature in order to gain a better understanding of the impact of structural and situational characteristics of internet gambling on the behaviour of vulnerable players. A scoping study was carried out to develop a comprehensive list of such characteristics. A scoping study aims to “map rapidly the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects in their own right, especially where an area is complex or has not been reviewed comprehensively before” (Mays, Roberts, & Popay, 2001; p.194).

A scoping review differs from a full systematic literature review in that it is a preliminary assessment of the potential size and scope of the available research literature (Kavanagh, Trouton, Oakley & Harden, 2005). Until recently, much less emphasis was placed on the scoping study as a legitimate technique to ‘map’ relevant literature in the field of interest (Arksey & O’Malley, 2005).

However, a scoping study will highlight important issues and identify the main areas for further empirical research. It differs from a systematic review in that it tends to address broader topics where many different study designs might be applicable, rather than focusing on a well-defined research question. Nor does a scoping study attempt to address the quality of the research reviewed (Arksey & O’Malley, 2005). However, these features do not mean that scoping studies should be seen as ‘second’ or ‘third best’ to systematic and narrative reviews. They offer the advantage of wider coverage and must still be methodologically rigorous and transparent (Stalker, Davidson, MacDonald, & Innes, 2006).

A scoping study was conducted to find out what the situational and structural characteristics of gambling activities are. A comprehensive list was drawn up by examining the literature, consulting with gambling studies research experts, and accessing internet gambling websites. The aim of the study was to find out whether internet gambling shares the same situational and structural characteristics of gambling in general, which characteristics are not applicable to internet gambling IGT, and whether any additional characteristics could be included. For a detailed account of the scoping study see Chapter 4.

3.6.2 Study 2 – The qualitative study

The second study of the thesis comprised ‘The Qualitative Study’. The aim of this study was to discover the motivating and inhibiting factors for engaging in online gambling, and to determine whether there were any differences between problem online gamblers and problem offline gamblers. The next section of this chapter will describe the study in detail and will involve describing the semi-structured interviews, the procedure for conducting the interviews and the grounded theory analysis of the interviews, as well as covering ethical issues in qualitative research.

3.6.2.1 In-depth semi-structured interviews

The method of investigation in this study was in-depth semi-structured interviewing. This has been defined as: “*Face-to-face encounters between the researcher and informant’s perspectives on their lives, experiences or situations as expressed in their own words*” (Minichiello, Aroni, Timewell & Alexander, 1990: p, 19).

Semi-structured interviews allow for a more natural discussion and free flow of conversation, without being bound by the standardisation of questions and rule (Wengraf, 2001). In-depth interviews provide a richness of depth and data not available from questionnaires by allowing individuals to elaborate on their responses. It was thought to be inappropriate to use a more rigid and structured interview method because this would have exerted more control over the participants and restricted their natural flow of discourse (Breakwell & Millward, 1995). Instead, the flexibility and adaptability of the semi-structured interviewing method creates a richer and deeper quality of accounts (Banister *et al.*, 1994).

The interview schedule was researched and planned in a step-by-step manner, by

examining the empirical literature and from the findings in Chapter 4. The interview schedule was piloted on one participant who was happy to give feedback on the questions asked. Each stage of re-drafting enabled for a more refined schedule. The areas for discussion within the schedule were generated from the piloting of the interview schedule, the literature review and the gaps that exist within the research literature. The interview schedule covered a range of topics, it was partly structured, partly unstructured in order for the participants to speak openly and in as much detail as needed. Probes were used where appropriate and necessary, to give as much relevant information as possible. The interview schedule evolved in light of new information and themes to explore as the interviews progressed. The areas of discussion in the interview schedule included, but not limited to:

- Reasons for gambling, and, if applicable, reasons for gambling online
- Experience of gambling
- Typical gambling sessions
- Acquisition of gambling
- Attitudes, beliefs and perceptions towards gambling
- Attitudes, beliefs and perceptions towards internet gambling
- Relationships

3.6.2.2 Method of analysis: Grounded theory

There are several different approaches to qualitative psychology with each approach concerned with human experience in its richness. However, some qualitative approaches try to describe an individual's experience within the personal 'lifeworld', while others turn their attention to the range of social interpretations of events available to a person, arguing that these interpretations are what gives form and content to the individuals experience (Smith, 2003).

Grounded theory (Glaser & Strauss, 1967) is an approach to research whereby a theory is grounded in actual data rather than imposed *a priori* (i.e., in advance of the data collection). It is particularly useful in exploratory research where little is known about the phenomenon under investigation. Grounded theory provided an alternative to quantitative methods which was regarded as the dominant approach at the time, and emerged as a result of the discontent with traditional deductive methods of researching

social phenomena (Douglas, 2004). The term ‘Grounded theory’ expresses the idea that theory is generated by (or grounded in) an iterative process involving the continual sampling and analysis of qualitative data. It emphasises participants’ own accounts of social and psychological events and of their associated local phenomenal and social worlds (Pidgeon, 1996). It has its roots in ‘symbolic interactionism’ emphasising the symbolic meanings that people attribute to ‘events’ and the ways in which these meanings interact with the social roles that people fill (McQueen & Knussen, 2006).

As Willig (2008) notes, Grounded Theory is both the process of category identification and integration (as *method*) and its product (as *theory*). As *method*, Grounded Theory provides researchers with guidelines on how to identify categories, how to make links between categories, and how to establish relationships between them. Grounded Theory, as *theory*, is the end product of this process and provides researchers with an explanatory framework with which to understand the phenomenon under investigation.

Since the publication of *The Discovery of Grounded Theory* by Glaser and Strauss (1967), the Grounded Theory method has undergone a number of revisions. The two authors themselves ultimately disagreed about the meaning and procedures of Grounded Theory. Glaser believed in a permissive non-restrictive approach to the data, allowing the concepts to emerge from the interactionism conveyed in the participants’ accounts. However, at present the more popular approach to Grounded Theory is the systematic procedure of Strauss and Corbin, (1990; 1998). In this approach, the researcher seeks to systematically develop a theory that explains process, action, or interaction on a topic, by evaluating the accuracy, significance, and generalisability of the emergent theory.

Strauss and Corbin’s (1990) systematic approach identified stringent rules for open, axial, and selective coding of data in order to produce a plan of conceptual causal interrelations and outcomes. However, Glaser (1992) denied this was possible in Grounded Theory and believed that forcing a preconceived framework would not generate any theoretical frameworks.

They also held contrasting beliefs about the role of the research question. Glaser (1992) believed that the actual research problem can only come from coding emergent data, because otherwise the research will become focused on issues outside the parameters of Grounded Theory. However, Strauss and Corbin (1990) argue that the research problem

can emerge from a range of external sources such as previous literature. It is very unlikely that a researcher can approach a project with no prior knowledge on that area, so it is somewhat inevitable that external sources may impact on the research. However, Glaserian grounded theorists maintain that the influence of existent literature is a further unwanted influence on the conceptualisation of the data.

Qualitative researchers are faced with the problem of making sense of and organising their data. For this, the researcher needs at least *some* theoretical resources to begin the process of interpretation and representation (Riessman, 1993). This may come from formal theories, a group of concepts, the researcher's interests, a school of thought, and/or from the researcher's own personal experiences. However, without the orientation provided by such frameworks, no sense at all can be made of a data corpus (whether qualitative or quantitative) (Pidgeon & Henwood, 1997). With Grounded Theory, what appears to be 'emergence' of theory is really the result of a constant interplay between data and the researcher's developing conceptualisations (Pidgeon & Henwood, 1997). It is impossible to set aside one's own perspective totally, but qualitative researchers believe that their self-reflective attempts to 'bracket' existing theory and their own values allows them to understand and represent their informant's experiences and actions more adequately than would be otherwise possible (Elliott, Fischer, & Rennie, 1999). Therefore, the methodology most suitable in this study for achieving the objectives set out in the introduction is the Strauss and Corbin approach.

Strauss and Corbin (1990) indicated that Grounded Theory is effective in generating knowledge of a social phenomenon that is under researched because it produces a conceptualistic understanding of the individuals, interactions, and inter-relationships. To date, literature in developing theoretical propositions regarding the reasons why people choose to gamble, and gamble online, or why people choose to gamble but not online is almost non-existent, therefore, they must emerge inductively through Grounded Theory. For a detailed account on the process of conducting Grounded theory see Chapter 5.

3.6.3 Study 3 – The online survey

The third study of the thesis was the online survey. This was a survey targeted at internet gamblers and was posted on a number of gambling forums on the internet. This method was adopted as it was deemed to be the most efficient in generating a large sample of online gamblers (see Chapter 6 for a detailed account of the procedure). The

findings from Chapter 5 were compared with the findings from Chapter 4 to inform which structural and situational characteristics were deemed the most important to include in the online survey. The characteristics identified in Chapter 4 which were considered to have a 'greater' impact online compared to offline gambling, and which were also reported by participants in Chapter 5 as being important factors were included in the online survey. The aim of the survey was an exploratory study to examine the online gambling behaviour among a sample of international internet gamblers.

3.6.3.1 Using the internet for surveys

One of the most commonly used methods for conducting research online are survey-based studies. They are generally easy and quick to complete, cheap to produce, and the data can be automatically inputted into SPSS for analysis (Wood & Griffiths, 2007b). Large numbers of participants can take part with no increased costs. People discussing sensitive issues may be more open in an online survey than in a face-to-face situation because of the anonymity it provides. A number of researchers have used this particular online methodology to examine aspects of gambling behaviour (see Griffiths & Barnes, 2008; Griffiths, Parke, Wood and Rigbye, 2009; Wood, Griffiths & Parke, 2007).

Griffiths (2010a) has highlighted some of the advantages of online questionnaires targeted at specific groups such as gamblers. These include: ease of participant recruitment; collapsed geographical boundaries that may increase numbers of participants; improved cost efficiencies (i.e., large scale surveys can be surveyed quickly and efficiently at a fraction of the cost of 'pen and paper' equivalents; improved time efficiencies (i.e., no travel needed by either the researchers or participants); and automatic data inputting. Typically in these types of studies, online surveys are posted on online gambling forums which are a convenient way to communicate information between players (Griffiths, 2010a). A significant number of people will give more honest answers to questions about sensitive topics, when giving their answers to a computer, rather than to a person or on paper (Macorr Inc., 2009). However, using the internet for surveys requires an awareness of methodologies, selection bias, and technical issues.

Questionnaires can be administered by email (e.g. using mailing lists), by posting to newsgroups, and on the web using fill-in forms. When web-based forms are used, surveys can be placed in a password protected area of a web site, or they may be open to

the public. Calculation of a response rate is more difficult if surveys are open to the public, however the number of people who access (without necessarily completing) the questionnaire can be counted and used as the denominator (Eysenbach & Wyatt, 2002). When email is used to administer questionnaires, messages are usually sent to a selected group with a known number of participants, thus allowing calculation of the response rate.

Issues of generalisability (mainly due to selection bias) arise when web-based surveys are used. Selection bias occurs due to the non-representative nature of the internet population and the self-selection of participants, i.e. the non-representative nature of respondents, also called the 'volunteer effect' (Friedman, Wyatt, Smith & Kaplan, 1997). However, web-based surveys are appropriate when respondents are already avid internet users (Wyatt, 2000) – as the population in question is internet gamblers then the respondents will be representative.

An effective way of recruiting participants for web-based surveys are emails to mailing lists or messages to forums and newsgroups of people who don't mind receiving messages with information about studies for participation (Reips, 2007). However, some of the readers of the recruitment message may see it as spam. Therefore it is best to ask for permission to send the message or even convince the moderator to endorse it and send it. To increase participation in the study, it is important to explain who you are, what the research is about and why it is important. Participants should be informed of how long it should take to complete and should be prepared for any sensitive questions that may arise (e.g., being asked about their financial situation).

Web-based experiments also have higher dropout rates than laboratory studies. In a lab study a participant would have to tell someone they are leaving so there is some social pressure to stick it out to the end, however, via the web people have no qualms about just clicking another button to leave a boring task (Birnbau, 2004b). When designing a web experiment, recording the attrition rate is useful because it can be used to detect motivational confounding by looking at dropout curves by experimental condition or by specific questions (Reips, 2007). For example, if there is a higher dropout in one condition or question/ set of questions, then it could be concluded that the condition/question is more boring or less attractive to participants than the others. The purpose of a dropout analysis is to see where and how many participants left the study

and to find out whether the dropout may be systematic (Reips, 2007). If dropout coincides with an experimental manipulation, then motivational confounding may be at work and the study is severely compromised (Reiss, 2000). Musch and Reips (2000) found that the average dropout rate in internet-based research is 34%, with a range from 1%-87%. Other motivational factors influencing the dropout could account for the large range. Additionally, the completion rate is higher if some form of reward is offered (individual payments or lottery prizes; Musch & Reips, 2000). There is some evidence to suggest that including progress indicators in internet surveys may increase completion rates (Couper, Traugott & Lamias, 2001). However, the research on this is limited.

In terms of surveys, context matters in how people interpret and respond to questions. Contextual factors such as previous questions and interviewer presence can influence the answers people choose to give to survey questions (e.g., Schuman & Presser, 1981; Schuman, 1992; Sudman, Bradburn & Schwarz, 1996). The visual layout of questions may also influence people's answers (Christian & Dillman, 2004; Tourangeau, Couper & Conrad, 2004; Smyth, Dillman, Christian, & Stern, 2006). The mode of communication is also important. For example, Smyth, Dillman and Christian (2007) note that interviewer administered surveys are almost always aural communication, paper surveys are based on visual communication, but internet surveys can be designed entirely visually so that emulate paper surveys or they can be designed using features such as sound and video clips.

However, what is thought to be more important is the question order effects whereby previous questions and the answers given to them affect how respondents interpret and answer subsequent questions. These are more likely to occur when the questions are close to one another, in terms of both topic and location in the questionnaire. A priming effect may occur (Schwarz & Clore, 1983; Tourangeau, Rasinski, Bradburn & D'Andrade, 1989; Schwarz and Bless, 1992) which is when a prior question brings to mind considerations that are then more accessible for use in interpreting and responding to a subsequent question. The result of priming is likely to be an assimilation effect when the information brought to mind is used to form a representation of the object being inquired about. Using an internet survey allows the researcher slightly more choice when designing the format. For example, Smyth *et al.* (2007) presenting all of the questions on one screen allows respondents to easily go back and forth throughout

the survey to remind themselves of the context of the questions and to re-examine relationships between questions, but doing so may increase the likelihood of context effects. Using page-by-page construction on the other hand, should reduce the likelihood of context effects by making the relationships between questions less obvious. For a detailed description of the procedure involved for conducting the online survey please refer to Chapter 6.

3.7 Ethical Issues

3.7.1 Ethical Issues in Qualitative Research

Ethical issues are an intrinsic part of the research process from the initial formulation of the research question through the actual interviews, to transcriptions and analyses, and even further when results are published (Brinkmann & Kvale, 2008). Ethical problems arise because of the complexities of researching private lives and placing accounts in the public arena (Birch, Miller, Mauthner and Jessop, 2002).

Four main fields traditionally discussed in ethical guidelines for researchers are informed consent, confidentiality, consequences, and the role of the researcher. These fields should not be seen as questions that can be settled once and for all in advance, but rather problem areas that should continually be addressed and reflected upon (Brinkmann & Kvale, 2008). Qualitative researchers should remain open to conflicts, dilemmas and ambivalences that are bound to arise throughout the research process. Protecting confidentiality can in extreme cases raise serious legal problems, such as when a researcher obtains knowledge of mistreatment, malpractice, child abuse, the use of drugs, or other criminal behaviours either by the participants or others. In such cases the researcher must decide whether the criminal behaviour warrants reporting.

Qualitative research methods such as interviews involve different ethical issues than those of a questionnaire survey. For example, in a qualitative interview, participants statements may be published in public reports so precautions need to be taken to protect the participants anonymity. In a questionnaire, confidentiality is assured by the computed averages of survey respondents. Anonymity can protect the participants, but it can also deny them *“the very voice in the research that might originally have been claimed as its aim”* (Parker, 2005: p 17).

Brinkmann and Kvale (2008) also make the point that the qualitative researcher should be aware that the openness and intimacy of much qualitative research may be seductive and can lead to participants to disclose information they may later regret. Furthermore, in some cases the participants may see the interview as some kind of therapy session for which most qualitative researchers are not trained.

Researchers face an ethical dilemma because he/she will want the interview to be as deep and probing as possible which carries the risk of ‘trespassing the person’, and on the other hand to be as respectful to the interviewee as possible which in turn carries the risk of getting empirical material that only scratches the surface. The researcher also needs to be careful that by developing rapport with the participant they are not led into the unethical affair of ‘faking friendship’ in order to obtain knowledge (Duncombe & Jessop, 2002).

Dreyfus and Dreyfus (1990) have outlined five steps of learning ethical expertise. The first is explicit rules and reasoning, which, with increasing experience and expertise, recede into the background of skill and habit, where the highest form of ethical comportment consists of being able to stay involved and to refine one’s intuitions. Moral consciousness then consists of unreflective responses to interpersonal situations, which in cases of disagreement, may be attempted to be solved through dialogue.

3.7.2 Ethics of Internet Research

All participants should expect rights to privacy, confidentiality, anonymity, and informed consent and researchers have a duty to respect and protect these rights. Researchers may begin by considering first of all whether online research is indeed preferable to offline research, precisely for ethical reasons. As Ess (2007) points out offline research may offer certain ethically relevant advantages, however, research online offers a distinctive set of advantages and potential benefits (as mentioned previously). Ess (2007) argues that these potential advantages must be weighed against the distinctive costs and risks of online research, including: greater risks to individual privacy and confidentiality (because of greater accessibility of information online regarding individuals, groups, and their communications – and in ways that may prevent subjects from knowing that their behaviours and communications are being observed and recorded); greater challenges to researchers because of greater difficulty in obtaining informed consent; and greater difficulty of ascertaining subjects identity

because of use of pseudonyms, multiple online identities, etc.

With regards to informed consent, it can be difficult to obtain consent from individuals if data is gathered from online message boards. There is also the debate over what is a 'public' or 'private' space online. Although online interactions are often observed by many other people (e.g. chat rooms, forums, etc.) the person online may not perceive their interaction as public (Griffiths & Whitty, 2010). Therefore, Whitty (2004) argues that the researcher needs to think about how the participant would feel if they were included in their studies without giving any consent. However, it is generally thought that if researchers record communications from online public spaces such as large chat rooms and message forums, where users are informed from the outset that their communication is not confidential then there is no need for informed consent (Kraut *et al.*, 2004; Cousineau, Green & Rancourt, 2005). However, researchers must still ensure that they protect the anonymity of the individual. However, with regard to research and observation involving more clearly private communications and personal information, informed consent is imperative. Participants must give consent for personal information to be gathered online; be given notice as to why data is being collected about them; be able to correct erroneous data; be able to opt-out of data collection; and be protected from having their data transferred to countries with less stringent privacy protections than the European Union (European Union, 1995). As an online survey is to be used for the 3rd phase of the research, participants will be directed to the information page at the start of the questionnaire and by continuing with the survey it is expected that participants consent to their data being used.

3.7.3 Ethical issues arising as a result of interviewing vulnerable problem gamblers

To some extent all research imposes on participants. However, conducting research on sensitive topics can be particularly difficult. Talking to gamblers about their addictions, and problems or consequences arising as a result of their gambling problem, is a very sensitive issue. Asking participants to talk about their gambling addiction can be difficult and upsetting for them. Feelings of shame, embarrassment and guilt are typical with problem gamblers (Lesieur, 1992). For males, talking to a female about their failures may be awkward and uncomfortable for them. The difficulty with this study was getting the participants to feel relaxed so that they would open up and tell their story. Developing rapport and trust is an essential element to interviewing participants. The participants often asked the researcher questions about their own experience with

gambling and these were answered directly without going into detail, which indicated to them that the researcher was also willing to share personal information, thus helping to establish rapport and trust. A trusting researcher-participant relationship contributes not only to the therapeutic benefits of the interviews to the participants, but also to the richness of the data (Murray, 2003).

The majority of the participants were happy to disclose personal information. For some this meant talking about criminal offences. It was made clear that although the interviews were confidential, if unreported crimes were disclosed then it would be at the discretion of the researcher as to whether these would be reported. However this was not an issue as none of the participants reported any non convicted crimes.

Another subject that came up quite frequently was the issue of suicide. The researcher was perhaps under-prepared for such information to be disclosed in the interview and having never encountered a problem gambler before conducting the interviews, the researcher may have been a little naïve as to the true consequences problem gambling can have. Hearing such stories was upsetting and left the researcher in a difficult position. The participants had chosen to disclose personal information and feelings leaving the researcher feeling powerless to help. Was this a cry for help? Did they want the researcher to do something about their desperation? This placed the researcher in a difficult situation as the researcher was not trained to counsel people and caused worry over whether a couple of the participants may be at risk of suicide. Professional help was provided to the participants, and follow up contact was initiated to check the well-being of the participants. As Alty and Rodham (1998) suggest, a contact for additional help needs to be identified and provided following the interviews.

There are many methodological and ethical concerns surrounding the protection of vulnerable research participants, but what about the impact on the researcher? Sensitive research can potentially impact on both the researcher and the participant. Researchers working with vulnerable populations should be aware that feelings of vulnerability may be reflected back to the researcher (Downey, Hamilton & Catterall, 2007). Davison (2004) commented that the potential to feel isolated, vulnerable and distressed does not magically disappear because we assume the role of researcher. A natural assumption is that power resides within the researcher's domain, implying that the researched are vulnerable participants who need protecting throughout the research process. However,

the researcher is not always in the dominant role as perceived, but is susceptible to changing positions of vulnerability throughout the research process.

Hearing stories from vulnerable populations can be upsetting and stressful. The stories told by the problem gamblers were very harrowing as people reported marriage breakdowns, lack of contact with children, bankruptcy, loneliness and suicidal thoughts. It is also not uncommon for participants to become angry, leaving the researcher feeling vulnerable.

Conducting good research will involve some aspects of researcher vulnerability. There is always going to be researcher/participant interaction that cannot be avoided and each participant will be affected by the experience (positively or negatively). It is fundamental that the researcher adopts empathy towards what the participant says in order to gain the confidence of the participant and access to their stories (Downey, Hamilton & Catterall, 2007).

It is also important to be aware that it is difficult to predict in advance exactly how the interviews will impact on the researcher and what vulnerabilities will be encountered (Downey, Hamilton & Catterall, 2007). The researcher was unprepared for the kinds of stories that participants would report. It is also worth noting that some participants were reluctant to talk about illegal activities, criminal offences or shameful behaviour, while others welcomed the opportunity and found it quite therapeutic. It is therefore important to approach each interview differently and to build trust by explaining what the project is about and why it is beneficial research to put the participant at ease and encourage them to talk more freely. Researching vulnerable populations can be viewed positively as it gives participants a 'voice' and allows them to tell their story, although the researcher should be aware that feelings of vulnerability may be reflected back to the researcher. As long as the researcher is well-prepared and establishes a trusting relationship then rich data can be achieved.

3.8 The Aims of the Mixed Method Approach

The intent of this three-phase, sequential mixed methods study was to establish what makes internet gambling potentially addictive, how is internet gambling currently accessed and used by players, and what are the salient structural and situational characteristics of internet gambling and how they impact psychologically and socially

on people's lives. The first study was a scoping study to identify the situational and structural characteristics of internet gambling that may accentuate or contribute towards the potential for addiction. The scoping study was subsequently used as secondary data to integrate with conceptual relationships emergent in study two. The second study was a qualitative exploration of the attitudes and views towards internet gambling, and uncovered the motivating factors for engaging in internet gambling as well as highlighting any differences between different groups of people. This was achieved by conducting semi-structured interviews with gamblers, internet gamblers and non gamblers, and inductively generating a theory by adopting a Grounded theory approach. Findings from this qualitative study then informed the construction of the online questionnaire used in the final study of the thesis.

Chapter 4: A scoping study of the structural and situational characteristics of internet gambling

4.1 Introduction

The gaming industry has used various design features (such as the structural and situational characteristics (Abbott, 2007; Griffiths, 1993; 1999b; 2007a; Griffiths & Parke, 2003; Parke & Griffiths, 2006; 2007) to entice people to gamble and to keep them gambling (Griffiths, 1993). It is likely that many of these have arisen spontaneously without in-depth psychological analysis and consideration of their impact on behaviour (Parke & Griffiths, 2006). An analysis of the structural characteristics allows us to understand which characteristics might facilitate the acquisition, development and maintenance of gambling behaviour irrespective of the individual's psychological, physiological, or socioeconomic status (Parke & Griffiths, 2007).

As mentioned previously, the structural characteristics of gambling activities can be designed to promote addictive tendencies (Griffiths, 2002). Technological innovation has paved the way for increased opportunities to manipulate the potentially addictive structural characteristics of gambling activities and thus increase the appeal and arousal of the games (Griffiths *et al.*, 2006). Thus, there is a potential issue for concern regarding problematic behaviour as remote gambling developments improve (such as internet gambling, mobile phone gambling, and interactive television gambling).

By identifying particular situational and structural characteristics relating specifically to the internet, it may be possible to see how needs are identified, to see how information about gambling is presented (or perhaps misrepresented), and to see how thoughts about gambling are influenced and distorted (Griffiths, 2003b). Therefore, potentially dangerous forms of gambling could be identified and effective legislation could be formulated (Griffiths, 1999a). Griffiths also suggests that by examining these types of characteristics among all types of gambling activity, it may help pinpoint where technology has a role (either directly or indirectly) in gambling acquisition, development and maintenance. Remote forms of gambling have changed the nature of situational characteristics of gambling and could have a large impact in uptake of gambling services.

By understanding the design and associated features of internet gambling websites, it may be possible to identify what makes some games problematic for vulnerable players, and what makes them enjoyable for social players. In addition, the identification of such characteristics will have important implications for a wide range of stakeholders (Parke & Griffiths, 2007) including:

- **Treatment providers:** Knowledge about the structural characteristics of online gambling activities will help treatment providers identify information about a player's motivation by examining the type and form of gambling preferred, and challenge cognitive biases and irrational beliefs. Treatment providers and voluntary workers will be able to consider the best approaches for dealing with problem gamblers who gamble on the internet.
- **The players themselves:** The information will also be of valuable use to the players themselves. If they can understand and identify cues by either avoiding or exercising caution when playing potentially high-risk games, they may be encouraged to gamble responsibly and thus reduce the risk of developing a problem. For example, players engaging in games that have high event frequencies could aim to be more cautious, if they know that they could spend money faster or chase their losses easier.
- **Gaming industry:** The gaming industry can use the information about risky features of games to help with their responsible gaming strategies. It may be possible to design games that have the minimum negative impact, and this would help in reducing the numbers of people who develop a gambling problem.

A structural characteristic approach to gambling is important as it allows the possibility to identify more accurately where an individual's psychological constitution is influencing gambling behaviour (Griffiths, 1999a). Furthermore, Griffiths also points out that this approach allows for psychologically context-specific explanations of gambling behaviour rather than global explanations such as 'addictive personality' (Griffiths, 1999a). Although many of the potentially gambling-inducing structural characteristics are dependent on individual psychological factors, the behaviour appears to be contingent on a psych-structural interaction (Griffiths, 1999a). Therefore a structural approach can be useful. In the context of internet gambling, it has been speculated that structural characteristics of the software itself might promote addictive tendencies for vulnerable individuals (Griffiths, 1995). The internet promotes

interactivity and to some extent defines alternative realities to the user and allows them feelings of anonymity (Griffiths, 2003b). Such features may be very psychologically rewarding to some individuals. Given the relative lack of information about the structural and situational characteristics of internet gambling, a scoping study was undertaken. The aim of the study was to find out whether internet gambling shares the same structural and situational characteristics of gambling in general, which characteristics are not applicable to internet gambling, and whether any additional characteristics could be found that have not been identified in land-based gambling.

4.2 Methodology

4.2.1 Design and materials

In order to gain a better understanding of the impact of structural and situational characteristics of internet gambling on the behaviour of vulnerable players, a scoping study was carried out to develop a comprehensive list of such characteristics (see Chapter 3 for a detailed account of the scoping study method).

A comprehensive list of the situational and structural characteristics of gambling was drawn up by: (i) examining the gambling studies literature, (ii) consulting with research experts in the gambling studies field, and (iii) accessing and examining internet gambling websites. As far as the authors are aware, this is the first study of its kind to systematically examine the situational and structural characteristics of internet gambling. It was assumed that many of the situational and structural characteristics already identified in the literature can be applied to internet gambling. The scoping study was conducted over a five-month period (March to July 2008) and focused on the following questions:

- What situational and structural characteristics of gambling activities have been identified in the literature?
- Which of these characteristics can be applied to internet gambling?
- Are there any additional characteristics unique to internet gambling?
- How might these characteristics impact on the behaviour of vulnerable players?

4.2.2 Procedure

A comprehensive research strategy was adopted that involved searching for research evidence from various sources:

- *Electronic databases: Academic Search Elite; Applied Social Sciences Index and Abstracts (ASSIA); Business Source Premier; Ingenta; PsyArticles; PsycINFO; Social Science Citation Index; Sociological Abstracts; Web of Knowledge.*
- *Experts in the gambling studies field:* Eight international gambling experts were consulted for their input into the situational and structural characteristics of gambling.
- *Online gambling websites:* Gambling websites were visited and those with free demo games were played to identify any further characteristics not identified in the gambling literature and/ or by the experts.

Academic papers and ‘grey’ literature were examined to find out what situational and structural characteristics have been identified in the gambling literature and how these characteristics may accentuate or contribute towards the potential for excessive play and/or addiction. These characteristics were then categorised to show the description of the characteristic, the effect they may have on the gambler, and implications for internet gambling. In addition, 70 different internet gambling websites were also visited and examined (see Appendix 1 for a full list). These websites were chosen by typing key words into Google, e.g. ‘gambling’ ‘betting’, ‘casino’, ‘bingo’, ‘poker’, ‘blackjack’. A wide range of gambling forums were accessed to look at as many different gambling activities and their structural characteristics as possible. After examining 70 different gambling websites it was felt that saturation was reached (in terms of identifying salient characteristics) and no more websites were necessary. Most websites offer free “demo” (demonstration) plays so that a player can learn the game and understand the rules before gambling for real, or simply enjoy playing the game without the risk of losing money. It was these games that were played upon. This was to get a feel for how the games operate, which characteristics are present in these gaming environments, and whether any additional characteristics could be included that have not been found to be present in offline media and/or the empirical literature.

Additional information was added to the list of characteristics based on what was found by accessing the gambling websites. Each characteristic was given an indicative

assessment rating depending on the impact it was thought to have on internet gambling, i.e., whether it would have a greater, less or same impact online compared to offline gambling. Where possible, this was based on what was known empirically about each characteristic. This full list of the structural and situational characteristics was sent to eight experts with relevant experience (of structural and situational characteristics) in the gambling studies research field. Their input into the situational and structural characteristics of gambling was considered important due to that specific expertise. Each ‘expert’ indicated whether they agreed or disagreed with each assessment rating and offered an explanation if they disagreed. The final list was based on a majority among all ‘experts’.

4.3 Results

A total of 38 structural characteristics were identified, along with seven ‘internet only’ structural characteristics. Additionally a total of 19 situational characteristics were identified. These characteristics (along with a brief operational definition) are listed in Appendix 2. The assessment rating was divided into three categories based on empirical (and other available) evidence: (i) those characteristics that would be unlikely to affect gamblers differently online or offline [“no difference”]; (ii) those characteristics that might have a higher impact on internet gamblers [“maybe”]; and (iii) those characteristics that are most likely to impact on internet gamblers [“higher”] (see Table 4). There were also a number of structural characteristics that were identified as ‘internet only’ and therefore these characteristics (by definition) usually (but not always) have a higher impact for internet gamblers.

Table 4: The structural and situational characteristics of gambling and the level of impact on Internet gambling

Structural characteristics

<i>Characteristic</i>	<i>Main effect of characteristic</i>	<i>Level of difference compared to offline gambling</i>
(1) Event frequency	Games with high event frequency (e.g. slot machines) are more likely to lead to problem gambling than games with low event frequency (e.g. lottery) (Griffiths, 1999b). Event frequencies on some internet games are far higher than offline counterparts. This has been	Higher

	reported in the literature (e.g. Griffiths & Barnes, 2008), and was also noticeable through our observations on the websites.	
(2) Event duration	Some events are 'fast' (e.g. a slot machine spin lasts approximately 3-5 seconds) while others are low (e.g., betting on a football game which lasts approximately 90 minutes) (Parke & Griffiths, 2007). Event duration on some internet games are lower than offline counterparts.	Higher
(3) Free practice games	These games (usually online but can be available offline) often have much better odds for the gambler than real games and so the player may find the game more attractive through increased familiarity and thinking they have a better chance of winning when playing for money (Sevigny, Cloutier, Pelletier & Ladoucer, 2005).	Higher
(4) Multi-game opportunity	In activities that have multi-game opportunities, players can access a selection of multiple games for concurrent play (e.g., playing a number of games of online poker simultaneously).	Higher
(5) Continuity of play	A player may be able to play many games in succession and theoretically can play until money runs out. The vast majority of offline environments close for at least part of the day whereas online environments allow 24/7 access.	Higher
(6) Autoplay	May result in an increased event frequency by reducing the level of human interaction, and therefore increasing gambling (Parke & Griffiths, 2007). Autoplay features in internet gambling tend to be faster than offline counterparts.	Higher
(7) Bonus features	Bonus features usually give players something for free within game and may encourage future play. Bonus features appear to be very prevalent in online games (based on our observations) and Livingstone, Woolley and Zazryn (2008) found that bonus's can lead people to spend more than they otherwise would.	Higher
(8) Payment	Non-cash payment (e.g., tokens, chips or credits) can 'disguise' the money's true value (i.e., lower the psychological	Higher

	value of the money) (Griffiths & Parke, 2002; Griffiths, 2003b). Unlike offline gambling, all internet games are played with virtual representations of money (i.e., e-cash).	
(9) Payout interval	In games that have a short payout interval (e.g., slot machines which may be a few seconds), a player can gamble again with little time given over to financial considerations, and winnings can be re-gambled immediately (Griffiths, 1993). Online games tend to have shorter payout intervals than offline counterparts.	Possibly higher ¹
(10) In-running betting	Betting during a game may lead to prolonged gambling as a result of within-session chasing, and an increase in perceived skill, (Parke & Griffiths, 2007). It would appear to be easier to engage in in-running betting online compared to offline although there is no empirical evidence for this.	Possibly higher
(11) Communication opportunities	It could be argued that there is more scope for gamblers to communicate with other gamblers in offline venues as internet gambling is typically done in isolation. However, many internet gambling sites provide online chat facilities and the gambling is done without being able to see the other gamblers in this disinhibiting environment. This may lead to increased play in online gambling.	Maybe
(12) Multi-player competition	Players can bet against house odds in a casino or on an online gambling website. Players can also compete against other players in table games like blackjack and poker (both online and offline), and can bet against others at betting exchanges. Problem gamblers are more likely to be competitive (Parke <i>et al</i> , 2004) and many popular types of online gambling involve competing against other gamblers (online poker, betting exchanges)	Maybe
(13) Stake size	Stake sizes can vary considerably. Lottery tickets are typically a fixed prize. In sports betting a player can choose how much to stake (Griffiths,	Maybe

¹ An alternative could be that due to the delay in receiving money there could be less reinforcement to play. It's likely that this could be the case for social gamblers but would be different for problem gamblers.

	1999a). There are some games on the internet that can be played for a fraction of the cost offline that may attract vulnerable players.	
(14) Time warnings	Clocks and time warnings help inform gamblers how long they have been gambling for. The disinhibiting nature of online gambling may mean players are less likely to take notice of the time than offline counterparts	Maybe
(15) Perceived skill / control	Some games with no and/or low skill can be highly problematic (e.g. slot machines). However, skill development can give a false sense of control if players do not realise their own limits (e.g. poker). However, the disinhibiting nature of the internet may lead to increased perceived skill and therefore increased risks for vulnerable players.	Maybe
(16) Winner information	Providing information on who has won on a particular activity may exploit the availability bias. Anecdotal evidence suggests there may be more winner information provided in online environments although there is no empirical evidence for this.	Maybe
(17) Player testimonials	Player testimonials can be used to generate hype about a game or a gambling website and to attract other players to play. Anecdotal evidence suggests there may be more player testimonials in online environments although there is no empirical evidence for this.	Maybe
(18) Sound effects while gambling	Constant noise and sound can give the impression of a fun and exciting environment and may act as a reinforcer for continued play (Griffiths <i>et al.</i> , 2006). Sound effects may be easier to generate online although there is no empirical evidence for this.	Maybe
(19) Winning frequency	A higher winning frequency can lead to continued reinforcement, leading to persistence (Griffiths, 1993). There is no evidence that winning frequencies are any different in online and offline games.	No difference
(20) Payout ratio	Games with higher payout ratios are thought to be more appealing to 'vulnerable' players as it can facilitate chasing (Sevigny <i>et al.</i> , 2005). There is no evidence that winning frequencies	No difference

	are any different in online and offline games.	
(21) Information about responsible gambling	Information about responsible gambling is increasingly common but little is known about its effect on player behaviour. There is some empirical research showing online gambling sites display little information about social responsibility (Smeaton & Griffiths, 2004) although some sites clearly do (Griffiths <i>et al.</i> , 2009). Our observations found that most sites do have information about responsible gambling, however, the sites vary vastly in how easy it is to find this information.	No difference
(22) Regular losses warnings	It is thought that information on how much players have lost can be a harm minimisation characteristic that may help curtail excessive gambling. There is no evidence that regular loss warnings are any different in online and offline games.	No difference
(23) Game complexity	If players cannot easily work out the probability of winning and/or the rules of the game they may have unrealistic expectations.	No difference
(24) Near miss opportunities	Near misses may produce some of the excitement of a win through secondary reinforcement. Players are not constantly losing but constantly nearly winning (Parke & Griffiths, 2007). There is no evidence that near misses are any different in online and offline games.	No difference
(25) Sequence of winning symbols	On slot machines, since the reels stop in a particular pre-programmed order, the player is most likely to see a winning symbol early in the result sequence leading to more persistent play (Reid, 1986; Strickland & Grote, 1967). There is no evidence that symbol sequences are any different in online and offline games.	No difference
(26) Bet frequency	Bet frequency for lottery games can be high. There is no limit as to how many tickets can be bought for each draw. Bet frequency can be higher than event frequency. There is no evidence that bet frequency is any different in online and offline games.	No difference
(27) Colour effects	Some colours may be associated with certain moods (e.g., red is “exciting”	No difference

	and “stimulating”; blue is “comfortable”, “secure”, and “soothing”; orange is “disturbing”, and green is “leisurely”) (Griffiths & Parke, 2003). There is no evidence that colour effects are any different in online and offline games.	
(28) In-game music	Music has the ability to affect an individual’s perception of a particular environment and their intended and actual purchase behaviour, as has been particularly demonstrated in shopping behaviour (Wilson, 2003; Areni & Kim, 1993). Music may also influence the amount of time a person spends in an environment (Milliman, 1982; 1986). Music can heighten psychological arousal or help listeners relax. These effects may influence gambling behaviour by making people spend more or less money (Griffiths & Parke, 2003; 2005). There is no evidence that in-game music is any different in online and offline games.	No difference
(29) Pseudo-skill elements	The more actively involved a person is with a gambling activity the more likely they are to believe that their actions can affect gambling outcomes (Parke & Griffiths, 2006). There is no evidence that pseudo-skill elements are any different in online and offline games.	No difference
(30) Secrets, clues and cheats	Games featuring secrets, clues and cheats may lead players to believe they are more likely to win. There is no evidence that secrets, clues and cheats are any different in online and offline games.	No difference
(31) Win accentuation	A win emphasised with (for instance) sound effects can symbolise a large payout and may attract other gamblers. Some slot machines buzz loudly or play a musical tune after a win (Griffiths <i>et al.</i> , 2006). There is no evidence that win accentuation is any different in online and offline games.	No difference
(32) Familiarity (non-gambling)	Naming a game after a popular TV programme may be more fun and enjoyable for the player, as they can interact with the character and they might think their knowledge of the show will help them win (Parke & Griffiths, 2006). There is no evidence that the role	No difference

	of familiarity is any different in online and offline games.	
(33) Name of the game	Names can give the impression that the games are places where players can get money; where skill is needed, and/or where the odds of winning are fair (Parke & Griffiths, 2006). There is no evidence that the name of the games makes any difference in online and offline games.	No difference
(34) Win probability	This may be one of the factors that may determine whether a person gambles on a particular activity in the first place. There is no evidence that the win probabilities are any different in online and offline games.	No difference
(35) Responsible gambling features	Responsible gambling features may allow players to gamble responsibly and help to minimise problem gambling behaviours. There is some empirical research showing online gambling sites do not have games with responsible gaming features (Smeaton & Griffiths, 2004) although some sites clearly do (Griffiths <i>et al.</i> , 2009). There is no empirical evidence that there is any difference between online and offline responsible gaming features. Some of the websites we observed had responsible gambling features but it was very difficult to find this on the websites.	No difference
(36) Multi-staking	A player can potentially lose more money than they can afford when multi-staking is available. Furthermore, a player may increase their stake size to chase losses (Griffiths, 1993). There is no empirical evidence that there is any difference in multi-staking in online and offline environments.	No difference
(37) Jackpot	By itself, jackpot size appears to have a marginal effect, but it is an important factor for acquisition. A higher jackpot will attract more participation in the activity (Griffiths & Wood, 2001). The overall effect is highly dependent upon win probability and/or stake size. There is no empirical evidence that jackpot size has any difference in online and offline environments.	No difference
(38) Sophisticated gaming	The graphics, sound and features of online gambling websites will be more	No difference

software	advanced than what was available a few years ago (Griffiths <i>et al.</i> , 2006). However, there is no evidence that online software has any more of an effect on player behaviour than offline gambling software.	
----------	---	--

Internet only structural characteristics

(39) Embedding	Some websites ‘embed’ particular words (e.g., ‘compulsive gambling’) in the site meta-tags to increase traffic via search engines. For example, anyone looking for help for problem gambling may get gambling websites ‘popping up’ in front of them, thus tempting them to continue gambling (Griffiths, 2003b; 2006c).	Higher
(40) Circle jerks	Some sites use ‘circle jerks’ which produce endless ‘pop ups’ when trying to close down an internet gambling site (Griffiths, 2003b; 2006c).	Higher
(41) Online customer tracking	Internet gamblers provide tracking data that can be used to compile customer profiles. These data can provide those in the gambling industry information pinpointing exactly how players are spending their time, how they are spending their money, how long they are gambling for, and on what games (Griffiths, 2003b; 2006c).	Higher
(42) Live remote wagering	Remote wagering is not limited solely to the internet. It also includes interactive television gambling and mobile phone gambling. People can place bets at any time of the day from a location of their choosing (Griffiths, 2006c).	Higher
(43) Multi-lingual sites	People from all over the world can access any gambling site and the multilingual option allows them to understand and access a site operating from a country of a different language (Griffiths <i>et al.</i> , 2006).	Higher
(44) Increased realism features	A player can bet on a live game (e.g., in a live roulette game the wheel and ball is real and can be viewed by a webcam) or gamble in real time via avatars. These features may increase the realism of gambling online (Griffiths, 2006d) but there is no evidence that this is different to offline gambling although the internet medium is more disinhibiting (Griffiths,	Maybe

	2003b).	
(45) Remote non-face-to-face medium	The privacy the internet offers allows people to gamble without others knowing or seeing what they are doing. This can lead to increased feelings of anonymity, disinhibition, dissociation/immersion, and escapism. There is some evidence to suggest that players will become immersed when using the internet (Griffiths, 2003b). This may lead to increased spending because online environments are more disinhibiting than offline environments. Furthermore, online users appear to open up more quickly online and reveal themselves emotionally much faster in the offline world. A disinhibiting environment may facilitate feelings of escape and can further reinforce the behaviour. Additionally the non face-to-face medium can lead to activities like gender swapping where players adopt a different persona online (Wood <i>et al.</i> , 2007a). Choosing to gender swap may have an effect on the gambler's style of play and interaction with other gamblers.	Maybe

Situational characteristics

<i>Characteristic</i>	<i>Main effect of characteristic</i>	<i>Level of difference in online gambling compared to offline gambling</i>
(46) Availability	Greater availability of gambling opportunities may lead to greater gambling participation and gambling problems. Online gambling provides greater availability than offline gambling.	Higher
(47) Number of venues	A greater number of gambling venues can lead to greater opportunities to gamble. With the number of internet gambling websites increasing, players do not have to travel to a specific venue to gamble. Players now have the freedom to gamble from a location of their choosing, i.e. home, work, or on their mobile phone.	Higher
(48)	Easy accessibility of gambling may lead	Higher

Accessibility	to more people initiating gambling. As the internet is now more accessible than ever before, gambling can be more accessible through the ability to gamble online. Internet gambling can be accessed 24/7 from the place of the gambler's choosing. The high accessibility and availability can lead to convenience as to why people choose to gamble on the internet	
(49) Affordability	The affordability of a gambling activity can influence whether a person gambles in the first place. Costs can include membership costs, internet costs, etc. However, as access to the internet increasingly becomes an integral part of occupational, educational, and social lives, free access to the internet outside the home is becoming more prevalent.	Higher
(50) Location	The location of gambling will be a factor in whether people choose to gamble or not. People can now access the internet and gamble online from the comfort of their own home, or while at work instead of having to travel miles to get to a casino or betting shop.	Higher
(51) Skill school	Skill schools may induce an illusion of control if players believe they are more skilled at the game than they actually are and may lead to increased risk taking and money spent. There is more opportunity to develop skills in certain gambling activities (e.g., poker) online than there is offline.	Maybe
(52) Sense of security (environment)	Players can gamble online from the comfort of their own home or workplace and therefore may feel safer than in a casino or betting shop.	Maybe
(53) Advertising	Gambling advertising is important in attracting potential players. It can also play an important role in normalising gambling. There is no evidence that advertising affects online more than offline gambling although there does appear to be far more advertising for online gambling when compared to offline gambling. Some gambling advertisements are specifically aimed at males (e.g., poker), while others are aimed at females (e.g., bingo). With gambling advertising increasing, in particular, adverts aimed at females, the	Maybe

	rate of gambling among females is likely to increase. Corney & Davis (2010) found that some female internet gamblers started gambling online on impulse as a result of an advertisement.	
(54) Social facilitation	There may be more opportunities for social interaction in offline gambling venues. However, internet gambling can be both social and asocial simultaneously. Gambling chat rooms and forums exist for players to socialise with other like-minded players. However, many would still argue that internet gambling is more asocial in nature as facial expressions and body language are not apparent and players can still adopt a 'socially desirable' personality.	Maybe
(55) Money access	ATMs are often located inside casinos or near casinos and betting shops so people can easily get more money. With internet gambling, once a player has registered their credit card details they can continue accessing their money and have the capacity to spend beyond their means. However, there is no empirical evidence that there is any difference between online and offline gamblers.	Maybe
(56) Smoking access	Public smoking bans have prevented gamblers from smoking in offline gambling venues. However they can continue to smoke while gambling from home.	Maybe
(57) Physical comfort	Comfort in casinos, such as seating and temperature, can be used to encourage and prolong gambling. However, gamblers may be even more comfortable in their own home.	Maybe
(58) Alcohol access	In an offline gambling venue, responsible gaming staff may stop an intoxicated person from drinking too much alcohol. A person can drink as much as they want when gambling from home on the internet (Griffiths & Parke, 2002).	Maybe
(59) Trustmarks	Successful brands have a 'trustmark', which is an apt gauge for social acceptability and social responsibility. There is some evidence that in commercial contexts, people trust the internet less than when purchasing goods or services offline although	Maybe

	research has shown that some gamblers are very loyal to particular companies online or offline (Wood & Griffiths, 2008; Griffiths <i>et al.</i> , 2009).	
(60) Celebrity endorsement	Gaming companies and online gambling websites use celebrity endorsement to increase the appeal of their games (Griffiths, 2007). Anecdotally, there appears to be more celebrity endorsement for online gambling but there is no evidence that these have any increased effect on player behaviour compared to offline celebrity endorsements.	No difference
(61) Lighting	Exploratory research has shown that people gamble more under red lighting than blue lighting (Griffiths & Parke, 2003). Griffiths, Spenwyn & Barrett (2010) looked at the combined effects of music and light on gambling behaviour and found that speed of bets was not affected by light but that a combined effect of light and music resulted in faster bets placed. However, there is no evidence of any difference that lighting makes in relation to online and offline gambling.	No difference
(62) Membership requirements	All casinos require registration, and internet gambling websites require some form of registration before players can gamble with real money. However people do not have to register to access most forms of gambling. There is no evidence that online gambling membership requirements are different from offline requirements in relation to subsequent player behaviour.	No difference
(63) Sexual stimulation	A form of advertising using sexually provocative images. There is no evidence that sexually stimulated advertising has any difference online compared to offline although anecdotal evidence suggests there seems to be more of this type of advertising online.	No difference
(64) Background music	Background music has the ability to affect an individual's perception of a particular environment and their intended and actual purchase behaviour, as has been particularly demonstrated in shopping behaviour (Wilson, 2003; Areni & Kim, 1993). Music may also influence the amount of time a person	No difference

	<p>spends in an environment (Milliman, 1982; 1986). Music can heighten psychological arousal or help listeners relax. These effects may influence gambling behaviour by making people spend more or less money (Griffiths & Parke, 2003; 2005). Some research (Dixon <i>et al.</i>, 2007; Spenwyn <i>et al.</i>, 2010), found that faster betting occurred while listening to higher tempo music. However, there is no evidence that background music has any different effect between online and offline gambling.</p>	
--	---	--

The aim of this scoping study was to identify situational and structural characteristics of gambling that have or may have a greater impact on internet gambling behaviour. The results of the scoping study show that there are extensive gaps in empirical knowledge with respect to the effects of particular situational and structural characteristics of internet gambling. It is clear that there is very little empirical research examining the potential impact of these characteristics on vulnerable individuals, and whether there are any additional implications for internet gambling (although this was – to some extent – to be expected given the relatively recent introduction of online gambling). The lack of data may have repercussions in terms of identifying particular addictive features of internet gambling to protect potential vulnerable players.

4.4 Structural characteristics of gambling

4.4.1 Online versus offline gambling: Structural characteristics that have a greater impact online

In this section, structural characteristics that are thought to have a greater impact on internet gambling behaviour are examined and discussed. *Event frequency* is widely believed to be one of the most important structural characteristics influencing excessive play. For internet gamblers, event frequency can be very high as slot machine and roulette games can be played at a significantly faster rate than would occur in offline venues. For instance, the gambler has the option of choosing when to spin the wheel (i.e., the player does not have to wait a few minutes for each spin). From examining the 70 websites we observed that online slot machines can also be played at a very fast speed of up to 30-40 times a minute (compared to 12-15 times a minute on an offline slot machine). Furthermore, many roulette games on gambling websites have very short

event durations. Typically the roulette spin lasts approximately eight seconds on most websites but sometimes as quick as four seconds. We also observed many sites have the option of playing without having to spin (the winning number is automatically called out). This reduces the event duration even further and there may be an even higher impact for online gamblers compared to those who gamble offline.

There is also a greater opportunity for players to play *multiple games*. From examining internet gambling websites, it became clear that the opportunity exists for players to play multiple games at the same time (e.g., playing multiple poker games online). This provides additional betting opportunities and can create a higher perceived sense of winning through multiple winning opportunities. Players can have multiple poker sites running at the same time. They also have the option of playing slot machines or other casino games while playing poker. Additional betting opportunities in the form of playing multiple games at the same time may be more problematic for vulnerable individuals than games in which players can only play one game at a time.

The opportunity for *in-running betting* may also have a higher impact on internet gamblers as they may have the opportunity to gamble on a sporting event while watching the game live in their home by using the internet. There is much more scope to place a bet interactively (i.e., internet or mobile phone) during a game than there would be to place a bet offline. The ease of accessing the internet makes it much more convenient to place a bet while watching a game from the comfort of the player's own home. Online gambling also allows players *continuity of play*. For example, when playing poker online, after a game has finished, a player does not have to wait for cards to be shuffled and new players to join. A new game can be started immediately. Therefore, it is our contention and based on our observations that the availability of continuous play on internet gambling may lead to prolonged gambling sessions when compared to similar games offline. Furthermore, the 24/7 accessibility of internet gambling may also facilitate the continuity of play.

The type of *payment* may also have a bigger impact online. For many gamblers, electronic cash (i.e., a virtual representation of money) lowers the psychological monetary value, and gambling with e-cash may lead to a "suspension of judgment" (Griffiths *et al.*, 2006; Griffiths, 2006d), temporarily disrupting the gambler's financial

value system and potentially stimulating further gambling. There is some evidence to suggest that people may gamble more using e-cash than they would with real cash (Griffiths, 1999a).

Payout intervals appear to be shorter online than their offline counterparts. Payout interval may also have a greater impact on problem gamblers online but not necessarily on non-problem gamblers. In offline venues, a player will sometimes receive the winnings immediately. If a player wins online, the winnings will be deposited into their online account. However, to actually have the money physically available may take a few days (i.e., for a cheque to arrive, or for the winnings to be transferred to their bank account). However, this delay in receiving winnings when playing online may lead to the players leaving the money in the internet account and gambling with it, whereas a player may be more likely to walk away with winnings when receiving them in an offline venue. However, the payout interval may have a different impact on problem gamblers and social gamblers. A problem gambler may be more likely to leave the winnings in the account to gamble again, whereas if there is a delay in receiving winnings this may lead to less reinforcement for a social gambler. However, as yet, there is no empirical evidence for this and further research is needed.

The majority of online gambling websites have *free practice games*, i.e., ‘demo’ (demonstration) opportunities that allow players to try out the games for free. With online gambling, it does not matter how hard the game is, players can learn the game in their own time and (in some games) get better before they play with real money. Although ‘skill schools’ exist offline, such as learning poker or blackjack in a casino, this cannot be done as easily offline as they may only be available on certain days and at certain times. Our observations on online gambling sites suggest there is a lot of scope for players to practice games for free before they play with real money. They can practice in their own time and from the comfort of their own home. Therefore a complicated or difficult game may not deter people from gambling online because they can practice this game until they are confident enough to bet with real money. Additionally gambling in practice modes may build self-efficacy and potentially increase perceptions of control in determining gambling outcomes motivating participation in their ‘real cash’ counterparts within the site (Griffiths *et al.*, 2006). Furthermore, many internet gambling websites have inflated *payout rates* when playing on the ‘demo’ games (Sevigny *et al.*, 2005). However, these unrealistically high rates

are not often maintained when playing for real money. Therefore, it could be argued that the inflated payout rates in the ‘demo’ sessions may attract gamblers to play for real money, particularly potential vulnerable players.

Bonus features may facilitate the illusion of control in slot games both online and offline. Gamblers gain a sense of satisfaction when playing with someone else’s money and can lead to increased risk-taking and spending money. One study (Livingstone, Woolley & Zazryn, 2008) found that ‘free’ games were a particular inducement for gamblers to play more. The free spins were seen as a ‘double win’ because they were seen as being ‘paid for’ by the gaming machine, the venue operator and/or other gamblers. Secondly, free spins were valued particularly on a number of popular machines in which the payout odds for wins during the free game features are tripled or more. Many online gambling websites entice players to join by offering bonuses such as free bets, for example a free £50 or £100 bet when the gambler first joins (e.g., *paddypower.com*; *bet365.com*). These free offers are likely to have a greater impact on internet gambling as there appears to be a greater availability of free bets and other bonus offers online than offline. Offline gambling venues have greater overhead costs and can not afford to have as many bonus offers and ‘free bets’ as online gambling companies.

The internet also has the capacity to provide feelings of dissociation and immersion, including losing track of time, and feeling like someone else, and being in a trance like state (Griffiths *et al.*, 2006). There is evidence to suggest that playing video games can lead to experiencing a loss of time (Wood *et al.*, 2007a). Online gambling uses many of the same structural characteristics as video games and so the potential for online gambling to facilitate an immersive state may be greater than has been the case for traditional forms of gambling (Griffiths *et al.*, 2006). Immersion can be aided by the use of other structural characteristics (e.g., realistic graphics, sound effects, and enhanced social interaction). The psychological feeling of being in an immersive state is reinforcing, because “time flies when you’re having fun”, and may therefore lead to longer play (Griffiths *et al.*, 2006).

Autoplay features can also lead to an increase in event frequency (Parke & Griffiths, 2006). This can be achieved by reducing the level of human interaction (as inevitably, human choice slows down overall playing time (Parke & Griffiths, 2006; 2007). When

accessing online gambling websites we noted that many sites have an autoplay feature (e.g., *888.com*; *Jackpot City*; *Blackjack Ballroom*) and that many of the autoplay features are much faster than their offline counterparts. Autoplay on internet gambling websites may be popular for some gamblers as they will be able to play on more than one site at the same time. This may have more of an impact on problem gamblers and may in some cases lead to increased gambling.

4.4.2 Online versus offline gambling: Structural characteristics that might have a greater impact online

In this section, those structural characteristics that might have a greater impact on internet gamblers' behaviour are outlined. However, further research is needed on all of the characteristics. *Sound effects* online (as with offline gambling) may give the impression of a fun and exciting environment and may act as reinforcer for continued gambling (Griffiths, 1993). From our visiting of online gambling websites, it was clear that many have background noise (such as faint voices, low level music, clapping, coins clanging) to give the impression that the player is in a casino. Some websites have the option of turning this background music off (e.g., *Golden Casino*). Sound effects appear to be easier to generate online and the majority of websites observed also have a voice to call out numbers (i.e., bingo, roulette), or to add up cards (i.e., for blackjack). Examples of these websites include: *First Web Casino*; *Cameo Casino*; *All Jackpots*; and *888.com*. These auditory features may act as reinforcers that make the gambler enjoy the experience and continue gambling (Griffiths & Parke, 2003). For example, hearing clapping when a player has won can lead them to feel that they have been skilful and can increase feelings of control and self-esteem, also leading to continued gambling because they believe they can win again. Musical interactions and verbal rewards may have the capacity to reinforce a sequence of wins, making them more memorable (Parke & Griffiths, 2007). However, more research is needed to confirm our observations.

Internet gambling also offers the opportunity for *multi-player competition*, i.e. to bet against others (e.g., in betting exchanges) and/or to compete against others (e.g., poker). Online poker and online betting exchanges are two of the fastest growing forms of online gambling. Griffiths (2005b) has highlighted some reasons why these particular forms are popular. Betting exchanges give gamblers a fairer and better deal (i.e., are good value to the punter). They also involve an element of skill and so gamblers have

the potential to win if they make the right bets. They also allow gamblers to bet against one another rather than gambling on a pre-programmed slot machine or making a bet on a roulette wheel with fixed odds. However, betting against one another leads to increased competition and research has shown that problem gamblers are significantly more likely to be competitive compared to non-problem gamblers (Parke *et al.*, 2004). Parke *et al.* (2004) suggest that competitive gamblers may be less inclined to quit and/or accept a loss, and as a result are more prone to chasing behaviour, which has been found to be a risk factor in the development of gambling problems (Griffiths, 1995). Additionally, Parke *et al.* (2004) suggest that winning may be more rewarding for a competitive gambler as they are more inclined to perceive gambling as an internal and external challenge than a non-competitive gambler. After incurring losses, the win may be much more rewarding for the competitive person as they feel greater triumph by defeating unlikely odds. This may have a higher impact on problem gamblers as some social gamblers may choose the internet to gamble so as not to play against and be seen by others.

Communication opportunities in online gambling may also have a greater impact than in offline gambling. In offline venues, gamblers can communicate information via body language, eye contact and/or tone of voice. In online gambling, these cues are not apparent. However, individuals can communicate via computer-mediated communication (CMC) within the game itself and even post-gambling through involvement in online gambling web-communities (Griffiths *et al.*, 2006). Gamblers can also play against other gamblers in some games (e.g., poker). Griffiths *et al.* (2006) note that an increasing trend for online gambling websites is to provide a customer forum to facilitate peer interaction and therefore increase the social element of the game. However, Griffiths (2006d) suggests that online communities can increase feelings of escapism, disinhibition, etc., and this may increase gambling.

As the internet is thought to be particularly immersive, regular *time warnings* can remind players how long they have been gambling for, otherwise they may lose track of time and gamble more money than they intended. Schellinck and Schrans (2002) reported that exposure to a 60-minute pop-up message (informing players of time spent) resulted in small but significant decreases in length of session and in expenditure among problem gamblers. From our accessing of online gambling sites, it was not clear whether such sites have regular time warnings that pop up. However, many of these

sites do have a page on responsible gambling and do suggest that players keep track of the time and to be aware of how long they have been playing for. Players may be more likely to lose track of time when gambling online than when gambling offline (Wood, Griffiths & Parke, 2007a; Wood & Griffiths, 2007a), however, further research is required as much of the research on time loss online has been carried out on non-gambling activities like video game playing. It is also important to have regular losses warnings. If players are not aware of how much time they have lost, they may underestimate this and continue to gamble. This is particularly important on the internet due to its immersive quality. However, internet sites may be better at displaying money lost as it will all be tracked in the players account, but this may not be as easy to do offline.

Stake size may also have more of an impact on gambling behaviour online than offline as players have more flexibility when choosing the stake size online. For example, players can choose to join a poker game for as little as 50 cents or play roulette at 25 cents. It is not possible to play for such low stakes in offline venues and therefore the low stakes offered online may attract people that otherwise would not have gambled in offline venues due to the higher stakes. However, there is little empirical evidence on stake size and gambling medium.

It has been argued that disinhibition associated with the internet may lead to an increase in *perceived skill/control* and therefore increased risks (Griffiths, 2003b). A player may believe they are more skilled at a game (e.g., online poker) than they actually are. Furthermore, the anonymity the internet provides has the capacity to increase feelings of comfort and confidence in their ability since there is a decreased ability to look for signs of disapproval, and can therefore increase risk taking and money spent (Griffiths *et al.*, 2006).

From our accessing of online gambling websites it was found that many sites have *winner information* (e.g., winner's lists at such sites as *Blackjack Ballroom; Foxy Bingo; Jackpot Joy; Vegas Red; Spin Palace*). It is unclear whether information on the number of winners makes players want to gamble more or less, or whether it has no impact, and further research is therefore warranted. However, anecdotal evidence suggests winner information is more prevalent in online gambling environments compared to offline ones. In a similar vein, Griffiths (2008a) has commented on the use of *player*

testimonials. This ploy is used by many online gambling operators who use these ‘bogus’ players’ testimonials to create publicity. From our accessing of online gambling websites, it was found that some sites have stories and testimonials from winners (e.g., *Jackpot Mania; Dream Bingo*). Griffiths (2008a) also speculates that for information like this to be taken on board, the information source needs to be credible (i.e., the source must be trustworthy and have expertise). Those who identify themselves as an internet gambler are more likely to treat someone else that is part of their ‘in group’ as trustworthy and more likely to take note of the player testimonial. We found that testimonials such as “*I just found the greatest online casino on the Net. You should check it out*” are quite common, yet, the extent to which internet gamblers act on such information requires further research.

4.4.3 Online versus offline gambling: Structural characteristics where the medium appears to make no difference

This section briefly examines structural characteristics that appear to have no difference when comparing online versus offline gambling. A *secret, clue or cheat* as to how to win on a gambling activity may stimulate an *illusion of control* because players believe they have extra knowledge and an upper hand and can therefore influence a chance event. This may also lead to longer play because players might believe that they will gain additional clues if they continue playing. With “secret” functions the payout ratio does not change, but players appear to experience a high illusion of control (Parke & Griffiths, 2006). Many gamblers believe they can “beat” or “outsmart” a machine or game as they feel that by knowing such secrets, clues or cheats that they have found the slot machine’s weakness (Parke & Griffiths, 2006). These specialist features may make the game more attractive to a minority of individuals (Parke & Griffiths, 2006). With internet gambling, many online gambling forums now exist (particularly for poker) where players can swap tips and can learn the tricks of the trade (Griffiths et al., 2006). However, there is no empirical evidence to suggest that such characteristics are any different online and offline and further research is therefore needed.

As internet gambling is less regulated than offline gambling venues, online gambling websites have the potential to set their own *winning frequency*. Some websites may have a higher winning frequency than would occur offline, thus increasing reinforcement that may lead to increased persistence and further spending. Therefore there is the potential for winning frequency to have more of an impact online than

offline. However, there is no empirical evidence to support this at the present time. In relation to *bet frequency*, it has been speculated that it is an important structural characteristic in the maintenance of gambling behaviour (Parke & Griffiths, 2007), however, there does not appear to be a difference between online and offline gambling as there is no limit to the number of bets or gambles that a player can place.

On electronic gaming machines and internet slot machines, specialist play features (that typically feature pseudo-skill elements) have the capacity to stimulate the illusion of control through personal involvement, perception of skill, and familiarity with a particular machine or gambling site (Griffiths, 1990a). There may also be longer play because there are no instructions of how to play or to use the features on the machines or gambling sites, and players may have to spend money learning to ‘master’ the controls. However, there is also no evidence that pseudo-skill elements have any additional impact when comparing online and offline gambling.

With regards to near miss opportunities (i.e., near wins), many papers have been written arguing that these may have an effect on the development and maintenance of gambling behaviour (Griffiths, 1991; 1993; 1994; 1999a; Parke & Griffiths, 2004a; 2007; Reid, 1986). For instance, Kassinove and Schare (2001) studied the effects of the near miss on persistence at slot machine gambling and found that the near miss had a statistically significant effect on gambling persistence but there was an optimal percentage of near misses. More specifically, the 30% near miss condition led to greater persistence than did the 15% or 45% near miss conditions. If the near miss is not followed frequently enough by a win, then it loses its effect. If it occurs too often it loses its effect through extinction, i.e., the ‘cry wolf’ scenario (Griffiths, 1999b; Reid, 1986). Future research could examine the impact of the near miss on the various factors, including engagement, spending (of time and money), and other indicators for problem gambling and customer satisfaction. Despite research in the area, there is no reason (at present) to assume that near misses have more or less of an effect online until further research has been conducted.

The *sequence of winning symbols* is often associated with near miss opportunities. Research has shown that the order in which symbols are presented on slot machines can have an impact on continued gambling behaviour. Symbols that are presented sequentially rather than simultaneously are more likely to incite players to prolong their

gambling session (Ladouceur & Sevigny, 2002). From our accessing of online gambling sites, it appears that online slot games operate in the same way as offline slots by presenting symbols sequentially with winning symbols being revealed first. On the basis of our online observations, there does not appear to be any additional impact of sequence order in online versus offline gambling.

A *win accentuation* on an internet gambling site may still create a feeling of accomplishment in the player but it is unlikely to attract other gamblers as internet gambling is primarily a solitary activity. A win accentuation may act as a reinforcer to a gambler to continue playing. From accessing online gambling websites, it was noted that some sites do accentuate a win (e.g., using louder noises when a player wins – *888.com*; or increasing the sound of coins clanging when a player wins - *Blackjack Ballroom*). However, there is no evidence that there are any differences between win accentuations online and offline.

The use of *familiar themes* may have a persuasive effect whether it is in offline or online gambling (Griffiths & Parke, 2006). Griffiths, (2007e) has argued that familiar themes have the capacity to induce a “psycho-structural interaction” between the gambler and the gambling activity, where the gambler’s own psychology interacts with the game’s structural characteristics and produces different consequences for each person depending upon what the feature means to them personally. For instance, if the theme is highly familiar, a gambler might be more likely to persevere with the complexities of a machine (Griffiths & Dunbar, 1997). Gamblers may find it more enjoyable because they can easily interact with recognisable images they experience. Therefore, the use of familiar themes may have a persuasive effect, leading to an increase in the number of people using them, and the money they spend. However, there is no evidence that familiarity has any greater impact on gambling online or offline. Similarly, there are a number of other structural characteristics that were identified where there was no evidence in the literature of any impact difference online versus offline including the *use of colour, in game music, name of the game, probability of winning, multi-staking, jackpot size and game complexity*.

Our observations while examining internet sites suggested that internet gambling operators may be better in some instances at displaying *information about responsible gambling* because in offline gambling venues, the information about responsible

gambling is often only on a poster on a wall and not easily and/or necessarily seen by everyone at the venue. Smeaton and Griffiths (2004) found that very few sites were engaged in socially responsible practice and that more could be done to protect vulnerable groups. However, this study used data collected in 2003 and from accessing many online gambling sites our own observations showed that many now have a page on responsible gambling with the option of self-exclusion, setting limits, and information on how they tackle underage gambling and problem gambling (e.g., *32 Red; Ladbrokes; Vegas Red; Spin Palace; Lucky Nugget; Dream Bingo*). On some sites, the information on responsible gambling was difficult to find (e.g., *Jackpot Joy; Littlewoods Casino*), and on a few sites it was unclear whether there was any information on responsible gambling (e.g., *Cameo Casino; Doolallys; Grosvenor Casinos, Ruby Casino*). There is also empirical evidence showing the kinds of responsible gambling initiatives available online and internet gamblers' attitudes towards them (Griffiths, Wood & Parke, 2009; Wood & Griffiths, 2008).

Our observation while visiting many of these sites was that information on responsible gambling had links to treatment providers, and how to seek help if a gambler suspected they may have a gambling problem. However, this was from accessing a relatively small number of gambling websites. Steenbergh, Whelan, Meyers, May and Floyd (2004) found that messages on information and limit setting significantly improved student gamblers' knowledge of the risks and rewards of gambling. However, this intervention did not significantly affect actual gambling behaviour. More research is needed to examine the link between gambling-related knowledge and problematic play, particularly in relation to higher-risk players whose baseline behaviour has more scope for being influenced by the experimental manipulations (Parke & Griffiths, 2007).

Research has shown that gamblers feel that responsible gaming practices demonstrate that a gaming operator has integrity, and that they care about their customers' wellbeing (Griffiths, 2007e; Wood & Griffiths, 2008; Griffiths, Wood & Parke, 2009). Many players also claim that operators adopting a responsible policy would gain their confidence and as a consequence report being more likely to bet with them as opposed to other firms who are considered to be "less socially responsible" (Parke, Rigbye, Parke & Williams, 2007; Wood & Griffiths, 2008). In a focus group study (Wood & Griffiths, 2008), it was reported that responsible gaming features increase levels of trust by demonstrating integrity. It appears that online gaming operators should not only

ensure responsible gaming features for the protection of vulnerable players but also to keep the trust of existing players so that they will continue to play on their site.

4.5 Internet-only structural characteristics

The scoping study also highlighted a number of structural characteristics and features that are unique to online gambling. Structural characteristics that are thought to have no greater impact gambling online (compared to offline gambling) on internet gambling include *sophisticated gaming software* and *features to increase realism*. (However, it should be noted that some offline gaming activities have specially designed sophisticated software such as the interactive gaming terminals recently introduced in Norway [Griffiths, 2008b]). Many of these ‘internet only’ structural characteristics concern issues regarding the ethics of internet gambling such as *online customer tracking* and the use of sophisticated gaming software to tailor activities to certain people. In addition, unscrupulous practices have emerged, such as ‘*circle jerks*’ and ‘*embedding*’ (reported in Chapter 2). As these structural characteristics are specifically related (or mainly related) to the internet and not offline gambling activities, the impact of these on gambling behaviour is not yet known and can only be speculated at this stage. Further research is thus required in this area.

Unscrupulous operations that aim to tempt users to access their sites, are likely to have a greater impact on problem gamblers/potentially vulnerable players than social gamblers as continual pop-ups can tempt a player to gamble. These may be particularly tempting for problem gamblers attempting to quit as anyone searching for information on compulsive gambling (to help control their addiction) will ‘hit’ a gambling website and could potentially be drawn to gambling again due to embedded words in the webpage (Griffiths & Parke, 2002). However, with customer tracking, the internet also has the potential to help problem gamblers. Gaming companies could, instead, focus on using their large data sets to help identify problem gambling, or ‘at risk’ behaviours to increase player behavioural awareness (Griffiths & Wood, 2008; Griffiths, Wood & Parke, 2009).

One consequence of the *non-face-to-face medium* is the potential for gender swapping online. Parke *et al.* (2007) found that around 12% of males and 20% of females had swapped gender when playing online poker. Research has shown that gender swapping in online poker occurs for a number of reasons (Wood, Griffiths, & Parke, 2007b).

Poker is typically seen as a masculine game. Women may feel intimidated and so may pretend to be male when playing online. Males may pretend to be female so other players think they are playing with an inexperienced and/or weaker player. Wood, Griffiths and Parke (2007b) also found that some players ‘gender swapped’ in order to gain a perceived psychological advantage. Wood *et al.* (2007b) found that female participants pretended to be male because they believed other males would not take them so seriously if they knew they were playing against a woman. It also gave them a greater sense of security as a lone woman in a predominantly male arena. The researchers also found that males and females had different reasons for gender swapping online. Males believed it gave them a strategic advantage, whereas for females, it was more about acceptance or privacy in what they perceived to be a male dominated environment. Whether players swap gender online with the intention of controlling the outcome of the game, or whether they do it in order to “escape” everyday life and use an online profile to dissociate from their real life persona requires further research. Further analysis of their research data showed that gender swapping was one of the main risk factors for problem gamblers (Griffiths, Parke, Wood & Rigby, 2009). Hussain and Griffiths (2008) argue that research could be carried out to see whether gender swapping has an effect on the gambler’s gender identity or gender role when they are not playing online.

Multi-lingual sites and *live remote wagering* may also have an impact on internet gambling behaviour due to increased convenience and accessibility. However, with most of these internet-only characteristics, we would contend that many of these characteristics may have an impact on internet gambling behaviour. However, due to a lack of empirical research to date, this cannot be confirmed or denied. None of the characteristics we identified were thought to have a high impact on internet gambling behaviour as there is simply not enough empirical research at present.

4.6 Situational characteristics

4.6.1 Online versus offline gambling: Situational characteristics that have a greater impact online

In this section, situational characteristics that are thought to have a high impact on internet gambling behaviour are examined and discussed. *Availability* and *accessibility* are widely believed to be two of the most important situational characteristics influencing excessive play. Internet gambling is available 24/7, and therefore people can

have unlimited access. Previous research has generally shown that where there is an increase in availability of gambling there is usually an increase not only in the number of regular gamblers but also an increase in the number of problem gamblers (Abbott, 2007). As the internet continues to grow in popularity and availability, it may be reasonable to assume that there will be an increase in the number of regular gamblers and problem gamblers. To a problem gambler, the internet provides the possibility of gambling 24/7 from the comfort of their home. Internet gambling may be a less protective environment for vulnerable players (Griffiths & Parke, 2002; Griffiths et al., 2006) due to the 24/7 availability and convenience. Prevalence of behaviours is strongly correlated with increased access to the activity. Therefore, increased accessibility of internet gambling may also lead to an increase in gambling problems (Griffiths, 2003b; Griffiths et al., 2006). Furthermore, increased accessibility of gambling activities enables the individual to rationalise involvement in the 'risk-behaviour' by removing previously restricted barriers such as time constraints emanating from occupational and social commitments (Griffiths et al., 2006).

Location and number of venues are two further factors to consider as internet gambling is commonly accessed from home that means younger children may be exposed to it. Internet gambling sites provide little in the way of 'gate keeping'. How can gambling operators be sure that adolescents do not have access to internet gambling by using a parent's or older sibling's credit card (Griffiths et al., 2006)? Employees may also gamble on the internet at work without the knowledge of management and co-workers (Griffiths et al., 2006). This may have implications in terms of work efficiency and productivity. For gamblers, not having to move from their own home or workplace may be of great benefit and convenience. Internet gamblers have been found to be significantly more likely to be problem gamblers (Griffiths, Wardle, Orford, Sproston & Erens, 2009), and internet gamblers rate convenience as one of the major reasons why they gamble online (Griffiths & Barnes, 2008). However, it could be that problem gamblers are using the internet as a convenient medium to gamble on an activity they are already experiencing problems with. This is still a cause for concern because the internet may be providing a facilitating factor in the development of gambling among vulnerable individuals.

It has also been hypothesised that as gambling becomes more technological, gambling problems may increase due to its asocial nature (Griffiths, 2003b), therefore the internet may lead to greater numbers of problem gambling due to the *anonymity* and asocial nature of it. Alternatively, the presence of others in a gambling venue may intensify gambling behaviour and magnify losses as Rockloff and Dyer (2007) found in their study using computer-simulated electronic gaming machines. They found that the intensity of gambling on a gaming machine (as measured by greater persistence and lower final payouts) increased with the implied presence of other gamblers, some of who were winning. However, there is the possibility that the asocial nature of internet gambling may have more of an impact on potential vulnerable players but further research is required.

There has also been a large increase in the number of gambling websites in recent years. In 1997 approximately 200 sites existed (Wood & Williams, 2007b). There are now around 3000 sites (Griffiths, Wardle, Orford, Sproston & Erens, 2009) ranging from casino games (blackjack, roulette, slots) to sports and pari-mutuel betting, to bingo and lottery sales, to the recent poker phenomenon (Stewart, 2006). With the number of gambling websites increasing rapidly, players now have a wide variety of gambling websites from which to choose from. The *affordability* of accessing the internet is no longer a primary barrier to engaging in online gambling (Griffiths *et al.*, 2006). Players can play for pennies or cents on the internet (e.g., poker, sports betting). Some games (e.g., online bingo) also offer free games at certain times of the day. This has considerably reduced the amount of money people need to spend when gambling.

Reduced social barriers to engaging in gambling may lead to disinhibition and increased gambling. Online users appear to open up more quickly online and reveal themselves emotionally much faster than in the offline world. Being in a *disinhibited environment* may lead to more money being gambled on the internet, particularly if they are motivated to maintain their initial persona (e.g., as a skilful online poker player) (Griffiths *et al.*, 2006).

4.6.2 Online versus offline gambling: Situational characteristics that might have a greater impact online

In this section, those situational characteristics that might have a greater impact on internet gamblers' behaviour are outlined. However, further research is needed on all of

the characteristics. One potential concern for online gamblers is the transfer of sensitive data, such as credit card numbers or bank account details, therefore *sense of security* (financial and physical) (*environment*) is likely to be important for internet gamblers. Clarke (1998) suggests that it may be more difficult to implement effective controls on the internet. However, Parke *et al.* (2007) found that female gamblers reported that there was not the same level of security at a casino or bookmakers than compared with gambling from their own home. Therefore, it is speculated that players may be more likely to gamble more as they perceive there to be little or no risk as they trust the environment. In a qualitative study with female internet gamblers, the safety, anonymity and privacy of internet gambling was a reason for gambling online (Corney & Davis, 2010). This is similar to the observation made by Griffiths (2001) in a national online gambling prevalence survey. He reported that the internet was a gender-neutral environment and that female players felt less alienated and stigmatised than in offline environments such as betting shops and casinos which tend to be male-dominated. Therefore it is thought that gambling online at home may be more secure and safe for players than in an offline venue and therefore may attract players that might otherwise have not gambled.

While surfing the internet, *'pop-up' advertisements* often appear in an attempt to attract players to new games or sites and encourage gambling. This was noted when accessing online gambling sites. The psychology of 'gambling advertising' is important in attracting potential players. In almost all advertisements there is terminological avoidance in the fact that there is almost no reference to the words 'gamble' and 'gambling' (Griffiths, 2007e). Instead, advertising phrases such as "*soon everyone would be a winner, you could be next*" may entice players to gamble (Derevensky & Gupta, 2007). The broadcast media also encourage gambling by romanticising stories about gambling and gamblers, and showing heroes thriving on risk, and by giving enormous publicity to game show contestants or gamblers who win substantial prizes (Smith & Abt, 1984). The advertising of the UK National Lottery on television, radio, newspapers and billboards, (Pugh & Webley, 2000) as well as the publicity surrounding winners may contribute to the impression that winning is far more frequent than it actually is (Wood & Griffiths, 2002). In the UK, there is far more advertising for internet gambling compared to offline forms of gambling and it is thought that this might have more of an impact on internet gambling behaviour although further research

is required to confirm such observations. However, Corney & Davis (2010) found that many female internet gamblers started gambling online due to an advertisement, pop-up, or promotion in a newspaper, on television, or on the internet.

Griffiths has also commented that the internet has fundamentally reduced the social nature of gambling to an activity that is essentially asocial in nature (Griffiths, 1999a; 2003b; Griffiths & Parke, 2002; Griffiths *et al.*, 2006). This has also been found in adolescent slot machine players (Fisher, 1993). Research has also shown that problem gamblers are more likely to be those playing on their own (Griffiths, 1990b; 1995). Wood *et al.* (2007a) also found that for some of the student gamblers in their study online poker playing was an important social activity, and more than half had been introduced to the game through friends. It has been speculated that gambling in a social setting could potentially provide some kind of “safety net” against problem gambling. Problem gamblers find it harder to control their expenditure and with easy access to their money, this may be potentially problematic. With internet gambling, players can often bet as much as they like when they register their credit card details to the site. With easy access to money, problem gamblers may be more vulnerable and find it harder to control their expenditure on the internet.

Access to alcohol has been found to be significantly associated with impaired control of gambling behaviour (Baron & Dickerson, 1999). Even a relatively small amount of alcohol can have a significant effect on the psychological processes that underpin self-control over gambling (Kyngdon & Dickerson, 1999). Data from the 2007 British Gambling Prevalence Survey (Griffiths, Wardle, Orford, Sproston & Erens, 2010) indicates that alcohol consumption was significantly associated with problem gambling. When a person gambles at home on the internet, there is no way for an online gambling operator to know whether that person is under the influence of alcohol (or other intoxicating substances) when gambling. Therefore if a person is intoxicated while gambling at home, this may lead to an increase in expenditure and/or irrational play. Additionally, *smoking access* may also be a factor in online gambling. Since smoking is now banned in offline venues, a smoker may be more attracted to gambling on the internet as it allows them to smoke and gamble at the same time. Corney & Davis (2010) found that some female internet gamblers stopped playing bingo in offline bingo halls when the smoking ban was enforced and instead started playing bingo online as they could easily gamble and smoke from the comfort of their own home. The *physical*

comfort of the gambling environment may also have an impact on gambling behaviour. A person can gamble on the internet from the comfort of their own home. If gamblers are physically comfortable, there is more chance that they will stay in the gambling environment (Griffiths & Parke, 2003). A relaxed environment may lead to people spending more than usual.

Internet gambling is thought to be an escapist activity and excessive involvement in this may lead to addiction (Griffiths, 2003b; Griffiths *et al.*, 2006). Wood and Griffiths (2007a) found that escape was the primary motivator of the gambling experience that facilitated the continuation of problem gambling. Online behaviour can provide a potent *escape* from the stresses and strains of real life. Furthermore, the interactive nature of the internet may provide a convenient way of increasing such personal involvement (Griffiths, 2003b; Griffiths *et al.*, 2006).

From accessing many online gambling websites it is clear that many gambling sites have a '*skill school*' or '*poker school*' page where players can get professional advice on how to play the game. However, the impact of these tips and advice on gambling is unclear. This facility may encourage people to gamble because they can learn how to play the game for free and once they are better at it they can then play for money. Furthermore, it may encourage people who otherwise would not have started gambling to start playing with money. Skill schools may also be available in some casinos but with much less availability.

4.6.3 Online versus offline gambling: Situational characteristics where the medium appears to make no difference

This section briefly examines situational characteristics that appear to have no difference whether the gambling is online or offline. *Background music* may heighten psychological arousal or help listeners relax which may influence the amount of money gamblers spend (Griffiths & Parke, 2003; 2005). Dixon *et al.* (2007) conducted a study in which they varied the speed of music played to gamblers playing online roulette. They found that speed of betting was influenced by musical tempo with faster betting occurring while listening to higher tempo music, but there was no relationship between musical tempo and either the size of the bet or the overall amount spent. The results from Dixon *et al.* (2007) suggest that background music may not have the potential to affect betting behaviour in individuals in relation to amount of money spent. However,

the study only examined virtual roulette and included the presence of others when gambling (which may have influenced their behaviour and inhibited risk taking).

Following on from this, Spenwyn, Barrett and Griffiths (2010) also found that musical tempo had a significant main effect on the speed of bets when playing online roulette, thus supporting Dixon *et al.* (2007) finding that fast tempo music leads to an increase in gambling behaviour. An exploratory observational study also found that arcades often have background music that caters for their customer demographics and that this may influence gambling behaviour (Griffiths & Parke, 2005). However, no research has been conducted on the effects of background music on internet gambling. From accessing online gambling websites it was noted that a few sites play background music. This was usually classical music (e.g., *Blackjack Ballroom*) or jazz music (e.g., *Bet UK*). However, further empirical research is needed to determine whether background music maintains or exacerbates gambling behaviour in some individuals. Additional research would also be useful to conclude whether background music may increase the confidence of the gambler, increase arousal in the gambler, relax the gambler, and/or help the gambler disregard previous losses. People gambling online can also provide their own background music. Despite research in the area, there is no reason (at present) to assume that background music has more or less of an effect online until further research has been conducted.

There is also speculation that players may trust a game more if it is endorsed by someone they like and/or admire, than a game that is not endorsed by a celebrity (Griffiths, 2007e). Poker is commonly endorsed as an acceptable activity by celebrities from many sectors of the 'showbiz' industry such as Ben Affleck and James Woods (Parke, Rigbye, Parke & Williams, 2007). Parke, Rigbye, Parke and Williams (2007) have also commented that there are a number of both male and female professional poker players whose celebrity status afforded through television shows such as the *World Series of Poker* may add to the credibility and acceptance of poker as a leisure activity. Griffiths (2007e) comments on the fact that someone has become a celebrity through skill and talent in an activity that gamblers are already positively predisposed towards suggests they will want to have more of a psychological association with these celebrities than those celebrities who just happen to play poker as a hobby.

From accessing online gambling websites, it was noted that the majority did not have celebrity endorsement, (although a few did). For instance, Sharon Osbourne endorsed *Gala Bingo*. *Foxy Bingo* had a page of celebrities who have played, and one site had a celebrity gossip column, a bit like in a magazine, where a player can read articles (*Mecca Bingo*). All of these were bingo sites, suggesting that females may be more attracted to celebrity endorsement than males, since bingo is typically seen as a female game (Potenza *et al.*, 2001, Griffiths & Bingham, 2002). Bingo offers benefits to those who wish to socialise in an atmosphere in which they feel safe and comfortable, both physically and psychologically. It would appear that there may be more celebrity endorsement for online gambling. However there is no empirical evidence for this and the impact this would have on gambling behaviour is not yet known.

Sexual stimulation is used in gambling advertising and online websites to attract players to the online gambling websites in the first place. Derevensky (2008) has noted that a common theme in gambling advertisements is the use of attractive sexually provocative females and that youth may be particularly susceptible to such ads. However, there is no evidence that *sexual stimulation* will have any additional impact when comparing online and offline gambling. Similarly, there are a number of other situational characteristics that were identified where there was no evidence in the literature of any impact difference online versus offline including the *lighting effects*, *membership requirements* and *gambling brand*.

4.7 Discussion

The aim of this scoping study was to examine whether internet gambling shares the same situational and structural characteristics of gambling in general; which characteristics are not applicable to internet gambling; and whether any additional characteristics could be included. By identifying particular situational and structural characteristics relating specifically to the internet, it may be possible to identify potentially dangerous forms of gambling (Griffiths, 1999a). By examining these types of characteristics among all types of gambling activity, it may help pinpoint where technology has a role (either directly or indirectly) in gambling acquisition, development and maintenance. Furthermore, by understanding the design and associated features of internet gambling websites and the games therein, it may be possible to identify what makes some games problematic for vulnerable players, and what makes them enjoyable for social players.

The results of the scoping study show that there are extensive gaps in our knowledge with respect to the effects of particular situational and structural characteristics of internet gambling. Over 60 characteristics were identified but there is very little empirical evidence for each one regarding the impact of these characteristics on potential vulnerable people and whether there are any additional implications for internet gambling. This lack of data may have serious repercussions in terms of identifying particular addictive features of internet gambling to protect potential vulnerable players. This study highlights that there are many gaps in our knowledge and to an extent this is to be expected since internet gambling is a relatively recent phenomenon. The remainder of this discussion will focus on those characteristics thought to have a greater impact online compared to offline gambling.

4.7.1 Summary of the structural characteristics

Many structural characteristics of gambling have been found to be important in the acquisition, development or maintenance of gambling behaviour. However, the impact of these characteristics on internet gambling has only been speculated at this stage and therefore, further empirical research is needed. Those characteristics in which there is a high need for further research on the implications of internet gambling include: event frequency; bet frequency, event duration; payout interval; near miss opportunities; social facilitation; immersion, and autoplay. This is not to say that the other structural characteristics do not warrant further attention, rather that there is an urgency for further research on the impact of these characteristics on internet gambling as they have been found to be important in offline gambling.

The relationship between event frequency and bet frequency needs further empirical investigation. The assumption is often made that the higher the number of betting events, the higher the frequency of betting. However, although players can place many bets on just one gambling event, the outcome of this event can influence future betting behaviour. Losing can lead to ‘chasing’ where the player will continue gambling to recoup any losses (Griffiths, 2003b). When gamblers lose so much that they feel they are ‘in too far to quit now’, they may become entrapped. They believe they must continue to play if they are to have any chance of recovering their losses (Walker, 1992). The player believes that persistence in trying to win back losses will be rewarded in the long run. Instead they get deeper into debt.

Event frequency, bet frequency, and event duration have been found to be important structural characteristics in the maintenance of gambling behaviour, particularly on slot machines (Parke & Griffiths, 2007). Therefore, further research on the implications of these characteristics on internet gambling is warranted. By accessing online gambling sites, it was noted that event duration can be a lot quicker online than in offline gambling (e.g., roulette spin online is approximately 8 seconds; in offline gambling, the time between placing bets and spin the wheel is approximately one minute). It is likely that event frequency, bet frequency, and event duration will have a large impact on internet gambling behaviour, but further empirical research is required to support this speculation.

Payout interval has been found to be an important structural characteristic in gambling (Parke & Griffiths, 2007), particularly slot machine gambling (Griffiths, 1993). Receiving winnings as quickly as possible may act as a reinforcement to winners to continue gambling. However, little is known about the speed at which internet gamblers receive their actual (rather than credit) winnings. There may be a delay between the player winning and the money appearing in their account. Clearly this may have different implications in terms of gambling behaviour compared to offline gamblers and therefore further research is necessary.

Near misses, or 'near wins', are widely believed to encourage future play, even in games of chance where the probability of winning remains constant from trial to trial. Near misses provide useful feedback for participants and can encourage them to continue gambling because they believe success is within their reach (Parke & Griffiths, 2004a). The player feels like they are constantly nearly winning and not constantly losing. The near miss could produce some of the excitement of a win (i.e., a secondary reinforcement) (Parke & Griffiths, 2004a). It may increase the seductive appeal of gambling by reinforcing the notion that wins are getting increasingly closer, thereby encouraging the continuance of play (Griffiths, 1990a). From a gaming industry perspective, very slight manipulation of near misses may reap huge commercial rewards in the very long run but may also have the potential to influence 'addictiveness' in gambling situations (Griffiths, 1999b). However, despite such speculation that near misses can encourage future play, there is a lack of empirical research on such a fundamental structural factor. Future research could examine the impact of the near

miss on the various factors, including engagement, spending (of time and money) and other indicators for problem gambling and customer satisfaction. Research should also investigate the players' perceptions of the near miss and whether they consider the near miss to be the result of something they failed to do or a ploy developed by the manufacturer.

The internet is also thought to facilitate feelings of immersion (Griffiths, 2003b; Griffiths et al., 2006). Video game players have been found to play games in an immersive state (Wood, Griffiths, & Parke, 2007b; Wood, Gupta, Derevensky, & Griffiths, 2004), and internet gambling shares many of the same structural characteristics as video games (Wood, Griffiths, Chappell & Davies, 2004) therefore, the potential for online gambling to facilitate immersive feelings may be far greater than has been the case for traditional forms of gambling (Griffiths, Parke, Wood & Parke, 2006). However, there is a lack of empirical research on how immersive internet gambling is, and whether being in an immersive state can lead to increased gambling online.

It was noted that many online gambling websites have an autoplay feature and this potentially increases event frequency as games can be played a lot faster. As event frequency has been found to be important in the development and maintenance of gambling behaviour, further research is clearly warranted on the impact of the autoplay feature on internet gambling and whether this can potentially lead to problematic behaviour in vulnerable players.

There are also structural characteristics where research in the impact of these in offline gambling is lacking, so for many characteristics the implications for internet gambling have been speculated. Such characteristics require further information to assess whether they actually impact on the acquisition, development or maintenance of internet gambling behaviour. Characteristics thought to be important and therefore high on the list for further research include: continuity of play; stake size; win accentuation; name of the game/website; communication opportunities; and probability of winning.

4.7.2 Summary of the internet only structural characteristics

It is clear that there are additional characteristics specific to the internet and the impact of these on potential vulnerable players needs to be considered carefully. It is apparent

that some online gambling sites operate unscrupulous practices such as embedding and circle jerks in the hope of attracting gamblers (Griffiths & Parke, 2002). Gamblers may also unknowingly be passing on information about themselves every time they access an online gambling site and play on the games. However, the impact of all these characteristics on the internet gambler is largely speculative and further research is required to be clear on the impact they may have on the internet gambler and particularly potentially vulnerable players.

Other structural characteristics relating to the internet which may have an impact on gambling behaviour include sophisticated gaming software; multi-lingual websites; gender swapping online; increased realism and remote wagering. In recent years, gaming software has become much more sophisticated allowing games to be developed which are more appealing to players. Players can also experience the feeling of participating in a real gambling environment with the use of webcams and player and dealer avatars, yet no research has examined whether this impacts on the acquisition or maintenance of gambling behaviour, or how this may impact on vulnerable players.

4.7.3 Summary of the situational characteristics

Internet gambling is changing the nature of situational characteristics of gambling and could have a large impact in uptake of gambling services. Accessibility of internet gambling is now much more widespread due to the 24-hour availability, cheaper costs of accessing the internet, and the wide variety of locations from which to gamble, including the home, workplace, or public places such as libraries, schools, and Universities. It is speculated that (in general) an increase in availability of gambling will lead to an increase in the number of regular gamblers as well as the number of problem gamblers (Abbott, 2007). It has also been noted that there has been a large increase in the number of gambling websites now available (Griffiths, Wardle, Orford, Sproston, Erens, 2009), thus increasing the availability of gambling. However, there is still debate as to whether availability of gambling leads to problem gambling and empirical research is needed to examine whether there is a causal link. Furthermore, with increased accessibility, there is the perception that the behaviour is the norm. Gambling behaviour becomes much more socially acceptable and this reduces one of the barriers to engaging in gambling behaviour.

Of great importance is research into the protection of potentially vulnerable players when accessing internet gambling websites. For example, it was noted that many gambling websites have a link to responsible gambling organisations but not all sites did, and furthermore, many sites did not have age verification procedures when playing on the demo games. This means that underage children and adolescents can access gambling much more easily online, than they would be able to offline. Although all internet gambling websites require some form of registration before players can gamble with real money, preventing underage children from gambling online may be more difficult to control than in offline gambling. There is no way of knowing whether a child is using a family member's credit card. A study conducted by Smeaton and Griffiths (2004) examined the social responsibility of internet gambling websites, and found that much more could be done to protect vulnerable groups online.

The use of gambling advertising may also stimulate people to gamble (Griffiths, 2003b). The media may promote gambling by highlighting stories about gambling, and giving mass publicity to game show contestants or gamblers who win substantial prizes (Smith & Abt, 1984). The advertising of the National Lottery on television, radio, newspapers and billboards, (Pugh & Webley 2000) as well as the publicity surrounding winners may contribute to the impression that winning is far more frequent than it actually is (Wood & Griffiths, 2002). Wood *et al.* (2007a) found that one reason people start playing poker is because they were introduced to it by their friends. Therefore, exposure to new gambling forms may attract additional people to start gambling, thus potentially increasing the number of people who are at risk for the development of gambling problems.

Other factors which have been highlighted as being potentially seductive and/or addictive in internet gambling include anonymity, convenience, escape, dissociation/immersion, interactivity and disinhibition (Griffiths, 2003b; Griffiths *et al.*, 2006). These factors allow for a person's identity to remain hidden and a player can adopt a different persona every time they play online. However, further empirical research examining whether such factors lead to people engaging in more gambling, taking more risks, spending more money, and/or chasing losses is required. There is a significant call for further research in this area.

4.7.4 Limitations

One of the strengths of scoping studies is that they provide a rigorous and transparent method for mapping areas of research (Arskey & O'Malley, 2005). With regards to the present study, the scoping method allowed the possibility to be in a position to illustrate the field of internet gambling in terms of the structural and situational characteristics of internet gambling. This was achieved by examining data from a number of sources: academic papers, online gambling websites; and experts in the gambling studies field. Despite the strengths there are a number of limitations to consider. Possibly the most important to consider is the nature of scoping studies themselves (Arskey & O'Malley, 2005). Firstly the study did not favour any particular source of information over another. The findings reported could be criticised as scoping studies deliberately make no assessment of the quality of the data. Rather the paper is a descriptive account of the available research on the structural and situational characteristics of internet gambling, and should not necessarily be taken as a critical analysis of the current research. However, scoping studies, by nature, are descriptive. As noted by Arskey and O'Malley (2005), "the scoping study does not seek to assess quality of evidence and consequently cannot determine whether particular studies provide robust or generalisable findings" (p.27).

Considering that approximately 2,300 gambling websites now exist (Online casino city, 2010), the small sample size of the gambling websites that were visited in this study (n = 70) is also worth bearing in mind. Therefore some characteristics may have been overlooked. The research team did access a number of online gambling sites until saturation was reached (i.e. nothing new was appearing), however, there is still the possibility that some data may have been overlooked.

4.7.5 Further research

This study only looked at internet gambling and not other forms of interactive gambling such as mobile phone gambling and interactive television gambling. It would be worth looking at these technologies individually to see if there are any differences compared with internet gambling. The scoping study demonstrated that there was a large quantity of potential research to be completed, which can be broken down into three basic questions: (i) Do other interactive gambling technologies (i.e., mobile phone gambling, interactive television gambling), share the same structural characteristics as internet gambling? (ii) Do these characteristics have the same implications as the internet

gambling characteristics? (iii) Are there any additional characteristics for mobile phone gambling, or interactive television gambling?

It is likely that many of the characteristics that apply to internet gambling would have the same effect on the mobile phone. For example, with regards to the 'internet only' characteristics examined in this study, the characteristic '*remote wagering*' would still apply for mobile phone use as a person can place a bet at any particular location using their mobile phone. The characteristic '*customer tracking*' may also apply because mobile phone operators would be able to collect data about how an individual is using their phone. Mobile phones are also becoming increasingly more sophisticated with better graphics. However, the gaming software will not be anywhere near as advanced as with internet gambling so the characteristic of '*sophisticated gaming software*' may have different implications for mobile phone gambling. It remains unclear if the other 'internet only' characteristics would have an impact on mobile phone gambling. The situational characteristics in this study, such as *availability*, *accessibility* and *convenience* may have a similar impact on mobile phone gambling as with internet gambling. However there is no research to support this speculation and further research into the situational characteristics of mobile phone gambling is required.

Gambling advertising appears to have had an impact on gambling behaviour, however, there is very little advertising in mobile phone gambling compared to internet gambling and this could be one reason why mobile phone gambling has not yet taken off. If people are not exposed to a particular form of gambling, then they are unlikely to engage in that behaviour.

4.7.6 Conclusions

Although problem gambling results from an interaction between the person's biological predisposition, their psychological constitution, their social environment and the nature of the activity itself (Griffiths, 2002), it could be argued that technological advance can also be a contributory factor (Griffiths, 2006c). By examining the technological components in gambling activities, it would appear that situational characteristics impact most on acquisition, and structural characteristics impact most on development and maintenance (Griffiths *et al.*, 2006). Accessibility of the activity and event frequency appear to be the most important of these factors (Griffiths *et al.*, 2006). Gambling advertising also appears to be having an impact on the acquisition of

gambling behaviour. Through advertisements, and television shows, movies, parental modelling, government endorsements, televised poker tournaments, gambling has become portrayed as normalised and harmless, exciting and fun (Derevensky, 2008). However, there is no research that indicates a cause and effect, such that internet gambling results in more problem gamblers. It could be that individuals with gambling problems are drawn to gambling on the internet because of a wide variety of features including their structural characteristics (Derevensky & Gupta. 2007).

Chapter 5: Motivating and inhibiting factors of engaging in online gambling behaviour: A grounded theory study

5.1 Introduction

It is estimated that in the UK over ten percent of people (over 6 million) gamble on the internet everyday (Gambling Commission, 2010). Internet gambling may provide many people with their first exposure to gambling (Griffiths 2006b) which may be more enticing than offline forms (Griffiths 1999a). Despite the rapid rate in which internet gambling has expanded, little empirical research has been carried out on the impact the internet has on gambling behaviour and in particular the structural and situational characteristics of the internet that may facilitate gambling behaviour.

Most people who gamble do not experience serious gambling-related problems (Shaffer, LaBrie, LaPlante, Nelson & Stanton, 2004). However, for a small minority of people, gambling can cause poor financial and health outcomes (Petry, 2006). New forms of gambling, such as internet gambling, raise concerns that availability and social approval of gambling will expose more people to the risks of gambling, increase the number of people in the general population with gambling-related problems, and exacerbate the difficulties of those already affected by gambling (DeFuentes-Merillas, Koeter, Schippers, & van den Brink, 2004; LaPlante & Shaffer, 2007).

The prevalence of internet gambling among the general population is not entirely known but preliminary studies have estimated the prevalence to range from 1.2% to 8% (e.g., Griffiths, 2001; Griffiths, Wardle, Orford, Sproston & Erens, 2009; Ialomiteanu & Adlaf, 2002; Wardle *et al.*, 2007). However, prevalence rates for internet gambling appear to increase when samples consist of gamblers, ranging from 6.7% to 36.5%, suggesting that gambling online may be more likely to be initiated by those who have already tried offline gambling (GamCare, 2006; Ialomiteanu & Adlaf, 2001; Woodruff & Gregory, 2005). Ladd and Petry (2002b) also conducted a survey on gambling behaviours and of 389 participants, 26% were classed as problem gamblers. Of the total participants 8.1% had gambled online. The results indicated that those with internet gambling experience were much more likely to be classed as a problem gambler than those with no internet gambling experience. What is more important, is that early indication suggests that problem gambling rates among those who have gambled on the

internet are nearly ten times higher than rates found in the general population, suggesting that internet gambling may be an emerging and likely problematic behaviour (Griffiths, Wardle, Orford, Sproston & Erens., 2009).

There have been several studies looking at quality of life among pathological gamblers, but there has been very little research examining the differences between traditional offline problem gamblers and online problem gamblers in terms of how the problem behaviour impacts on their health and wellbeing. One study by Griffiths and Parke (2007) comprising in-depth interviews with four gamblers, examined the individual differences and cognitive processes that discriminate between traditional (non-internet) gamblers and internet gamblers. Using thematic analysis, they found a few subtle differences between the two types of gamblers in terms of financial stability, motivation, need for acknowledgement, physiological effects, and social facilitation, but more research is needed on a larger scale examining the differences between offline and online gamblers, and whether problem offline and problem online gamblers differ. The internet may be attracting a different type of gambler than the traditional offline gambler, and as such, there may be a new type of problem gambler emerging (Wood, Griffiths & Parke, 2007). The question then arises as to whether the consequences of problem gambling differ between online problem gamblers and more traditional offline problem gamblers.

Using data from the British Gambling Prevalence survey in 2007, of 9,003 participants, Griffiths, Wardle, Orford, Sproston and Erens (2009) found that internet gamblers (n=476) were significantly more likely to be male (74% vs. 26%), relatively young adults, single, well educated, and in professional/managerial employment. In a two year epidemiological study of internet poker gambling behaviour, LaPlante, Kleschinsky, LaBrie, Nelson and Shaffer (2009) identified two subgroups of poker players. Approximately 95% of the 3,445 sample gambled moderately, with the remaining containing a smaller subset of most involved poker players. The majority of individuals moderated their behaviour based on their wins and losses, exhibiting 'rational' betting behaviour, thus suggesting at the population level that losing can discourage ongoing play and winning can encourage further play. The subset of most involved poker players devoted much more time and money to this activity than did the rest of the cohort.

In another online survey of internet gambling behaviour of 563 participants (23% problem gamblers), McBride and Derevensky (2009) found that compared to social gamblers, problem gamblers were significantly more likely to spend more time gambling per session, gamble alone, from school, or with a cell phone, gamble with more money, wager online while consuming alcohol or illicit drugs, and lose more money gambling online. Concerns about internet gambling have also been expressed in the past and relate to issues such as accessibility, availability, convenience, escape, immersion/dissociation, anonymity, disinhibition, associability and event frequency (Griffiths 2003a). However, land-based gambling venues have become far more prolific and easily accessible so why might some people chose or prefer to gamble on the internet? The purpose of this study was to discover the motivating factors for engaging in online gambling, as well as inhibiting factors which prevent the use of online gambling behaviour, and more generally what impact the internet is having and will have on gambling behaviours in society. Additionally, as there have been some differences noted in the literature between online and offline gamblers, a further aim of the study was to explore whether problem online and problem offline gamblers differ in their experience of problem gambling, or whether problem gambling (online or offline) is likely to impact on people much the same way regardless of their preferred gambling activity and/or medium in which they engage in the behaviour.

5.2 Methodology

5.2.1 Design

To explore the complexity of, and inter-relationship between, the issues and processes identified, a qualitative method was used (Mays & Pope, 1996). A naturalistic approach was adopted as the aim was to discover experiences from the perspective of the participants.

A structured Grounded Theory approach (Strauss & Corbin, 1990) was utilised. Grounded Theory allows the researcher to induce a process from the ground up. As Strauss and Corbin (1990) put it: “the Grounded Theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived Grounded Theory about a phenomenon” (p.24). This approach was employed to enable an emergent theoretical framework to conceptualise the reasons for participating in gambling and online gambling and to highlight any differences between offline gamblers and internet gamblers. To date, literature in developing theoretical

propositions regarding the reasons why people choose to gamble, and more specifically gamble online, or why people choose to gamble but not online is almost non-existent, therefore, they must emerge inductively through Grounded Theory.

5.2.2 Participants

A total of 29 gamblers (15 online gamblers and 14 offline gamblers) ranging in age from 21 years to 57 years with an average age of 36 years were interviewed ($SD = 11.3$ years). Of these, 25 were male and the remainder were female. In addition, 11 non-gamblers were interviewed ranging in age from 20 to 58 years, with an average age of 38.6 years ($SD = 13.5$ years). Of these, six were female and five were male. All participants were interviewed face-to-face apart from three participants who were interviewed by telephone. The participants were sampled from across the UK including Nottingham, Sheffield, Manchester, London, Oxford, Birmingham, Wolverhampton, Falkirk and Aberdeen, and one participant who had emigrated to Australia.

Some of the participants were recruited through the *International Gaming Research Unit's* (IGRU) case files at Nottingham Trent University. The study also employed a snowball effect to generate more participants. Upon receipt of interest in taking part in the study, participants were fully briefed about what was required of them, and of their right to withdraw at any point. In the later stages of the data collection, it was proving far more difficult to find participants who only gambled offline. The researcher attended a local Gamblers Anonymous (GA) meeting to distribute recruitment leaflets about the study in an attempt to recruit more participants. This resulted in a further three participants but two of them did not turn up for the scheduled interview. The non-gamblers were recruited using an opportunity sample.

Across all participants there was considerable overlap in gambling activity preference, and although individuals appeared to have a distinct preference for one gambling activity, many individuals also had experience in many different gambling activities. The majority of the online gamblers participated in online poker, with nine participants (60%) stating that this was their main gambling activity. Sports betting was also a popular online gambling activity. The activities that the offline gamblers participated in were much more varied, with no single activity engaged in more frequently than others. Activities engaged in offline included horse race betting, sports betting, roulette,

blackjack, poker, fruit machine playing, bingo, lottery, and scratchcards. Table 5 shows the demographic characteristics of all participants.

Table 5: Basic demographic details of study participants (n = 40)

Identifier	Online, offline or non-gambler	Age	Sex	Type of gambling	Problem gambler status	Ever sought treatment
Edd	Online	32	M	Poker, horses	No	No
Clive	Online	47	M	Poker, roulette, horses, blackjack	Ex-problem	No
Phillip	Online	44	M	Sports, horses	No	No
Damien	Online	43	M	Sports, horses, roulette	Yes	Yes
Joseph	Online	28	M	Poker	No	No
Nathan	Online	34	M	Poker, horses, sports, roulette	Yes	Yes
Leon	Online	25	M	Poker	No (professional)	No
Fran	Online	57	F	Bingo	Ex-problem	Yes
George	Online	53	M	Blackjack	Ex-problem	Yes
Nick	Online	26	M	Sports	No	No
Alex	Online	32	M	Sports, horses	Ex-problem	Yes
Martin	Online	26	M	Poker	No (professional)	No
Anthony	Online	29	M	Poker	No	No

					(professional)	
Emma	Online	23	F	Poker	No	No
Tim	Online	37	M	Poker	No	No
Barry	Offline	41	M	Horses, sports betting	Yes	No
Patrick	Offline	42	M	Slot machines	Yes	Yes
Richard	Offline	57	M	Poker	No	No
Mary	Offline	51	F	Slot machines, bingo	Ex-problem	No
Chen	Offline	52	M	Horses	Yes	No
Rick	Offline	26	M	Roulette	Ex-problem	Yes
John	Offline	34	M	Roulette, horses, sports	Yes	No
Carlos	Offline	19	M	Poker	No	No
Rose	Offline	21	F	Lottery, scratch cards	No	No
Max	Offline	23	M	Roulette, blackjack	Ex-problem	No
Jeff	Offline	42	M	Horses, sports, virtual roulette	Yes	No
Kristian	Offline	26	M	Poker	No	No
Robert	Offline	38	M	Horses, virtual roulette	Yes	Yes
Dean	Offline	27	M	Sports, horses	No	No
Brenda	Non-gambler	26	F	Occasional lottery in past	No	No
Hazel	Non-gambler	42	F	Nothing	NA	NA
Len	Non-gambler	52	M	Lottery every week	No	No

Simon	Non-gambler	33	M	Nothing	NA	NA
Mick	Non-gambler	46	M	Nothing	NA	NA
Maria	Non-gambler	53	F	Nothing	NA	NA
Tom	Non-gambler	24	M	Occasional day out to the races	No	No
Amanda	Non-gambler	20	F	Nothing	NA	NA
Charlie	Non-gambler	25	M	Nothing	NA	NA
Charlotte	Non-gambler	46	F	Lottery every week	No	No
Edith	Non-gambler	58	F	Nothing	NA	NA

5.2.3 Problem gambling diagnostic measures

Participants defined themselves as problem gamblers on the basis that their gambling behaviour had caused them significant problems either in the past and/or present. The study also administered two problem gambling diagnostic measures to all gamblers (i.e., DSM-IV, American Psychiatric Association, 1994); PGSI (Ferris & Wynne, 2001). As mentioned in Chapter 1, a cut-off point of four or more affirmative responses has been found to give the most accurate responses for classification. The cut off score for the present study was also four.

The Problem Gambling Severity Index (PGSI) was also used as it was designed for use with a general population and has been found to be valid at assessing degrees of problem gambling severity in a non-clinical context (Holtgraves, 2009b). The PGSI is a subset of the larger Canadian Problem Gambling Index (CPGI; see Ferris & Wynne, 2001). PGSI items include chasing losses, escalating gambling to maintain excitement, borrowing or selling to obtain money to gamble, betting more than one can afford, feeling guilty, being criticised by others, harm to health, financial difficulties to one's household and feeling that one might have a problem with gambling. Three of the items are new (gambling more than one can afford to lose, harm to health and financial difficulties to one's household) and the remaining items are all drawn from the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) or the DSM-IV (American Psychiatric Association, 1994) criteria for problem gambling. The PGSI is an evolution of older measures rather than something entirely new (Ferris & Wynne, 2001).

Several research studies have used the PGSI (e.g., Wardle *et al.* 2007) and an initial report indicated that it has good psychometric properties (Ferris & Wynne, 2001). It classifies those problem gamblers who are most severely disordered but also has greater classification accuracy than other measures for successfully identifying individuals who are at low or moderate risk for developing a gambling problem (Wynne, 2003). There are four classification categories based on the following cut off points for PGSI scores: 0 = non-problem gambler, or non-gambler; 1-2 = low risk gambler; 3-7 = moderate risk gambler; 8+ = problem gambler. In this study, the two problem gambling diagnostic measures were significantly correlated with each other ($r=0.765$; $p<0.01$). Cohen (1988; 1992) suggests that r values of .10 show a small effect, .30 show a medium effect, and .50 show a large effect. Thus, the two scales show a strong correlation.

The problem gambling diagnostic measures confirmed that all of the self-identified problem gamblers had a problem with gambling. Two internet gamblers were classed as problem gamblers according to the DSM-IV screen but were not classed as problem gamblers according to the PGSI so they were not included as problem gamblers in the present study. Furthermore, from speaking to these two internet gamblers, it did not appear that they had a problem with gambling. Therefore, participants were classed as problem gamblers if they scored four or more on the DSM-IV screen and scored eight or more on the PGSI.

For the self-identified ex-problem gamblers, both the problem gambling diagnostic measures did not indicate problem gambling behaviour. This was because the participants completed the questionnaires with reference to their present behaviour and they had all managed to stop gambling. For some, this time period had been over 12 months, whereas for others it had been slightly less than 12 months. It was apparent from talking to the ex-problem gamblers that in the past they had a gambling problem but had since managed to recover. One self-identified ex-problem gambler still gambled frequently but had managed to control his behaviour and both the diagnostic measures did not indicate problem gambling behaviour.

In total, fifteen participants were identified as current or past problem gamblers. Eight of the participants were identified as current problem gamblers. Six of the participants were ex-problem gamblers who no longer gambled at all, and one participant was an ex-problem gambler but continued to gamble. Of all the problem gamblers and ex-problem

gamblers, eight of them had sought some sort of treatment at some point (e.g., self-help groups, residential therapy, and/or counselling). Only one participant was currently in treatment. The majority either gave up with treatment or did not seek it at all because of the perception that it did not work. However, of the six problem gamblers reported having been able to recover from their addiction, four sought professional help to recover, while the other two managed to do it alone or with the support of family and friends.

5.2.4 Procedure

A semi-structured interview guide was developed based on a schedule of key questions and themes, as identified in the literature, and informed by the scoping study. Semi-structured interviews are especially useful for gathering personal information that only the respondent is in a position to give. This can include personal opinions, attitudes, beliefs, accomplishments, and major life events, as well as personal background information and that person's interpretation of all this (McCracken, 1988).

Additional issues were incorporated in later interviews in response to emerging data and to follow-up emerging concepts to confirm theories or look for exceptions. Handwritten notes on the transcripts were taken, in addition to field notes of emerging themes and concepts throughout the research process to maximise the dependability of the data analysis (Charmaz, 2006).

Data were collected between July 2008 and July 2009. Participants were interviewed face-to-face at a location of their choosing (their home, the researcher's office, or a local coffee shop). Additionally, three interviews were conducted by telephone. All interviews were recorded with the permission of the participants (all of whom gave their consent) using a digital voice recorder. These were then transcribed verbatim. Field notes were taken during all interviews. The participants were interviewed only once, and the interviews lasted from approximately 35 to 75 minutes. The interviews with the non-gamblers were generally shorter, lasting from approximately 25 to 40 minutes. Informed consent was obtained before each interview started.

The main focus of each interview was the participant's account of their gambling behaviour and how and why they first started gambling. They were asked about what it was that they liked about gambling, why they chose to gamble online and/or offline, and

their opinions on online and offline gambling. The non-gamblers were asked about whether they had ever gambled in their lives and if so why, and why they presently did not gamble. They were also asked about their opinions on online and offline gambling. The questioning process also developed organically as theory emerged from the data.

In general, the participants who had a gambling problem tended to talk more freely and needed little prompting as they were keen to explain their situation in great detail. Those participants who had sought some kind of treatment were familiar with discussing their problems. A few participants who had not talked about their gambling behaviour before appeared to use the interview as a kind of cathartic opportunity to tell someone (i.e., the interviewer) about their situation.

5.2.5 Analysis

The transcripts were entered into *QSR Nvivo* (Version 8), a computer software package for the management and organisation of qualitative data. Each participant was given a unique identifier. Using a process of open coding, axial coding, and selective coding (Strauss & Corbin, 1990), in addition to constant comparison of the data, a number of themes and categories emerged. The dynamic relations between the categories were thus explored further. To facilitate the emergence of themes, the interview transcripts were read, reviewed, reread and reviewed again by the researcher in order to gain familiarity with the content.

Analysis began with open coding and required the researcher to carefully read through the data in sequence and generate and apply as many codes as needed to catalogue what is seen to be 'going on' in the data. This minimises the possibility of missing important concepts in the data. Constant comparison is a key aspect of Grounded Theory. Data segments are compared with each other in order to ensure codes are assigned to all relevant data. This ensures that the coding process maintains its momentum by moving back and forth between the identification of similarities among and differences between emerging categories (Willig, 2008). Analysis involves a constant moving back and forward between the entire data set, the coded extracts of data that the researcher is analysing, and the analysis of the data that the researcher is producing (Braun & Clarke, 2006). For a list of the codes see Appendix 3

The thinking behind all of the decisions that are made, such as the creation of categories and how these categories link together conceptually, were recorded by using ‘memos’. Memos are short notes attached to categories that “catch [a researcher’s] thoughts, capture the comparisons and connections [the researcher] make[s], and crystallize[s] questions and directions for [the researcher] to pursue” (Charmaz, 2006; p. 72). Memos enable the researcher to retrace their analytical steps, but also work through new ideas, and are an integral part of the Grounded Theory process. A particularly important part of Grounded Theory is the requirement to fully document the analytic process. This not only serves as a trace, but also as a prompt to further analysis – an important part of which is to force the tacit, implicit, or subliminal to the surface of awareness (Turner, 1981). An example of one of the 46 memos made was that of ‘money spent on gambling’. This was created to capture the researcher’s thoughts around this theme as participants’ talk was very varied. Some participants referred to stake size, winnings, profit, and/or total money lost. Participants also talked about how much they spent on gambling in relation to past gambling, or having to bet increasing amounts of money. Creating such memos helped to define relationships between codes and theorising ideas about categories.

After open coding, the researcher embarked on ‘axial coding’ that involves re-visiting the codes and the data to which they have been applied to rethink, revise and develop higher order categories. Coding continues to be developed and defined throughout the entire analysis (Braun & Clarke, 2006). Axial coding allows the possibility to increase or decrease the amount of data coded at a particular point, to uncode a data segment where it is now deemed not to be relevant, and/or to rename codes to more accurately represent the nature of the data coded at them. At this stage, it is possible to explore the relationship of categories and make connections between them. The linking together of these higher and lower level codes is described as being “*like putting together a series of interlocking blocks to build a pyramid*” (Corbin & Strauss, 2008; p.198). The combination of higher categories explained by lower categories, and the use of properties and dimensions to specify lower categories leads to a rich description of the data, and also helps to build a framework within which to organise the concepts (Henn, Weinstein & Foard, 2009). Diagrams and models were employed to help clarify the evolving Grounded Theory process. Appendix 3 shows the 21 higher order categories and the varying levels of lower categories (amounting to 268 in total)

The final stage of the analytic process was ‘selective coding’. This focused on verifying the patterns and relationships identified. It may require comparing data coded at particular themes or concepts across different subsets of data in order to validate conclusions and further illustrate the developing theories. As the axial coding developed, a small number of themes began to emerge as central in the study. Selective coding began with the selection of one of these as the central phenomenon. Primarily, selective coding is a commitment to coding data in relation to the identified core variable.

The identification of the core concept is often the hardest process of Grounded Theory as it involves identifying a singular, all encompassing concept that is both relative and workable around the primary emergent concepts, thus meticulous interpretation and analysis is required. It is important that the core concept has importance in application of the research by influencing formal theory.

Grounded Theory can also describe Glaser and Strauss’ methodology for the systematic analysis of unstructured qualitative data. Pidgeon and Henwood (1997) speak of the *method* of Grounded Theory in its own right. An abbreviated version of Grounded Theory can be adopted when working with the data only (Willig, 2008). Here, the interview transcripts are analysed following the principles of Grounded Theory (i.e., the processes of coding and constant comparative analysis). However, theoretical sensitivity, theoretical saturation and negative case analysis can only be implemented within the texts that are being analysed (Willig, 2008). Some would argue that merely adopting a Grounded Theory methodology approach to the data analysis is actually more like conducting content analysis. However, the researcher’s task in content analysis is to allocate instances to a set of predefined, mutually exclusive and exhaustive categories. This is not the case with Grounded Theory, and so it seems reasonable that many Grounded Theory studies have adopted the principles of Grounded Theory in the analysis but time or resource constraints can prevent the implementation of the full version of Grounded Theory.

The approach adopted for this study was a somewhat abbreviated version, in that time constraints and restrictions on participants prevented full theoretical sensitivity. The majority of the interviews were conducted before any full analysis was carried out. However, analysis of these interviews commenced and this led to further questions to be explored in four subsequent interviews.

5.3 Results

During the analysis of the data, three key questions were at the forefront of the mind and considered different aspects of internet gambling behaviour:

- 1) What are the motivating and inhibiting factors of internet gambling behaviour?
- 2) How do problem gamblers differ from non-problem gamblers in their gambling behaviours?
 - a. Do problem online gamblers differ from problem offline gamblers?
- 3) What impact will the internet have on gambling behaviours?

These questions will be considered in turn.

5.3.1 What are the motivating and inhibiting factors of internet gambling behaviour?

There was a great deal of overlap between the online and offline gamblers in the reasons they gave for gambling. The five main themes identified as to the reasons why people gamble are:

- 1) Gambling as fun (e.g., enjoyment; excitement, sociable; special events)
- 2) Gambling as a financial motivator (e.g., to make money; to get out of a hole; attracted by the jackpot amount)
- 3) Gambling as a challenge (e.g., stimulation; competition)
- 4) Gambling as a way to change mental state (e.g., escape; boredom; fill a void)
- 5) Gambling as an activity influenced by others

These were evident in the accounts of both online and offline gamblers. At face value, it would seem quite obvious that people gamble because it is fun or because they want to make money, but what role is the internet having on peoples' reasons for gambling? Online gambling has features that clearly differentiate it from offline gambling resulting in different motivations and reasons for gambling in this medium.

5.3.1.1 Greater opportunity to gamble

During the analysis of the data, a core concept clearly emerged – the greater opportunity to gamble – and appears to account for a large proportion of why people are using the internet to gamble. All other significant emergent concepts and properties were readily inter-related to this core concept. This includes the situational factors that entice people to gamble in the first place, and the greater variety of games available for people to play

online. Internet gambling is more readily available, easily accessible, convenient, and offers value for money (better odds online; free offers, bonuses, etc.). These features may get people gambling online who otherwise may not have started gambling.

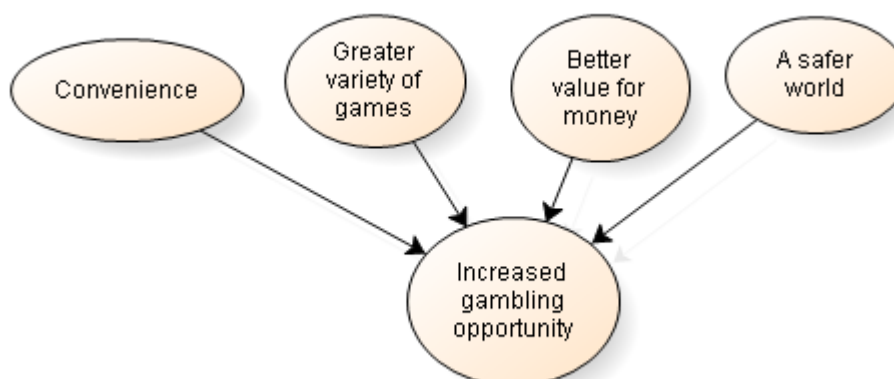
Through constant comparison, the data provided no indication that any aspect of online gambling promoted less opportunity to gamble. Two offline gamblers stated that they did not use the internet to gamble simply because they did not have access to the internet, but this did not reduce their opportunity to gamble, rather it failed to increase their opportunity. They felt this was a ‘blessing in disguise’ that they did not have access to the internet because they felt that that would make their gambling behaviour even more problematic:

‘Because I haven’t got a computer at home, I haven’t got access to it. It’s a bit like saying what you haven’t got you don’t miss...I’m glad I’ve not got into that to be honest with you...I’ve heard some bad stories about that’ (Barry, 41).

‘I’ve never had a computer of my own. If I went to the library, a lot of the gambling sites they are blocked anyway, so you know, I was really lucky that way’ (Robert, 38).

Four sub-themes emerged as to why people choose to gamble on the internet and why it is providing more opportunity. These were: convenience; value for money; greater online variety; and, a safe world.

Figure 1: Motivating factors for engaging in online gambling



5.3.1.2 Convenience

An emergent pattern from the data was the convenience that the internet provided. The internet reduces the amount of time spent when gambling because the person does not

have to travel anywhere, they are not restricted by opening hours, and they can gamble from the comfort of their own home.

'You don't have to drive anywhere, you have all your home comforts' (Anthony, 29).

Traditionally, placing a bet or gambling involved physically entering a gambling outlet. In contrast, people no longer have to physically enter a gambling venue to be able to place a bet or gamble. The removal of unnecessary time consumption through internet gambling is another barrier to gambling participation that has been removed.

'You haven't got to get out of the comfort of your armchair and walk out down the road in the rain' (Clive, 47).

It is also much more convenient for remembering to pick weekly lottery numbers:

'I've got six numbers that I always play and it comes out direct debit so it's paid for constantly without me doing anything' (Nick, 26).

It is much easier to play the lottery online because a person does not have to remember every week to go in a shop and buy the tickets. Working long hours no longer restricts people from gambling. Essentially, gambling has now become a leisure activity replacing activities such as watching television or socialising outside of the home.

'It's something to do at night. If you're not going out for the night...have a quick half an hour, hour of poker' (Joseph, 28).

Participating in gambling at home is less disruptive to one's lifestyle and wellbeing than a range of other leisure activities such as drinking alcohol. This therefore enables the gambler to justify elevated gambling involvement. Gambling is perceived as a more suitable leisure activity because it can be performed with greater efficiency and time management because of technological developments.

Internet gambling provides far more opportunities to gamble as it is much more easily accessible and is providing (theoretical) '24-hour gambling' where anyone can gamble at an hour of day that suits them.

'There is always a game anytime of the day, you can always go online and play so it's just a lot more...accessible' (Anthony, 29).

'I go on there because I want to go on there. But I also go on there because it's there to go on. I mean nowhere else could I go and get a bet at midnight, and carry on gambling through to 6[am] in the morning' (Clive, 47).

The internet is also much more readily available. Some gamblers were attracted to internet gambling as soon as it became available. On being asked when they started to gamble on the internet, one participant responded:

'I can't remember when but as soon as gambling on the internet was allowed...I would play games online for rating points...and as soon as William Hill came and various different sites I started gambling as well' (Nathan, 34).

This person was already gambling frequently offline and he was using the internet to play games to increase his high score on certain activities (i.e., for rating points). As soon as gambling on the internet became available it was simply a new medium in which to engage in gambling more conveniently.

Poker has become very popular online, mainly because it is much more available via the internet than offline. For example, traditional poker games in casinos have structural and situational limitations; players must be at the venue to play and there must be an unoccupied seat at the table. However, online poker rooms allow players to have unlimited access to poker games and they can play against people from all over the world. People also use the internet because it is easier than having to go to a physical gambling venue:

'It's easier isn't it? Even if I walk past a shop and I thought, I'll have a flutter I'd still probably do it online' (Nick, 26).

'Gambling on the internet is easier because...you've not got to go up to the people and write the things...the slips, and you don't have to look around so it's a lot easier' (Philip, 44).

In general, the gambling literature demonstrates that an increase in availability of gambling opportunities tends to lead to an increase in gambling participation (Jacques, Ladouceur, & Ferland, 2000). In countries where gambling has become widely available, public attitudes have generally become more accepting of gambling, and gambling participation has become commonplace throughout the general adult population (Abbott,

Williams & Volberg, 2004). Such data indicate that gambling involvement appears to be significantly affected by situational determinants and therefore cannot be solely attributed to individual differences.

5.3.1.3 Value for money

Value for money is a major reason why people choose to gamble online. For operators, the cost of setting up an online gambling business is significantly lower than the cost to open an offline gambling venue. As a consequence, the online gambling industry has become highly competitive and gamblers can receive more competitive prices and promotional offers that they would be unlikely to receive offline. Therefore, the consumer feels they are getting better value for money online and this perceived increase in value for money may lead to an increased likelihood to gamble. In particular, the free offers tempted people who had never gambled before:

'An email came in from one of these casinos and...well I don't normally read that kind of thing and for some reason I read it and it said, well whatever you deposited they would double' (Fran, 57).

Over half of the internet gamblers said they were attracted by these websites offering free bets. These common online promotional offers on internet gambling websites appear to attract new customers as such offers are not typically on offer in venues such as high street betting shops. These are a potentially powerful marketing tool for online casinos and online betting shops. Bonuses range from matching customer deposit amounts, offering a free stake to gamble with, and awarding customer loyalty points to be redeemed for prizes. This sense of a greater 'value for money' attracts gamblers away from gambling at offline venues to internet gambling.

'I heard that if you open an account you get free bets. I thought you don't get that in the betting shops so it started like that' (Nick, 26).

People are choosing to bet on the internet to get what they perceive as 'free money'. Gamblers will also check out many websites for the free bets on offer:

'I would hunt about and I would say, oh yes there's another one, Daily Record Bingo, we'll go on that, and so...that would influence me greatly' (Fran, 57).

However, some gamblers showed an awareness that these offers are not as great as they might first appear:

'I've got all the free bets off the various different sites, the £25 with Ladbrokes and William Hill and all these kind of things definitely help but even then they're a con anyway' (Nathan, 34).

They are seen as 'a con' because the person has to bet so much money before they can withdraw the 'free money' they have been given, and this quite often leads to spending far more money than what the websites are offering:

'You couldn't withdraw it which was the snag. You had to actually bet something like 30 times the amount they had given you' (George, 53).

The introduction of 'betting exchanges' facilitated sports betting for many gamblers. Betting exchanges are where gamblers can bet against one another and the operator running the betting exchange matches the bets placed by the gamblers. Betting exchanges have the potential to give gamblers a fairer and better deal, thus offering greater value for money (as the customers receive better odds for their wager with the removal of marked up betting odds).

'You tend to be able to get better odds on Betfair than you can at bookmakers' (Clive, 47).

'You get better prices online because it's easier...it's more competitive and the bookies have to give you better prices and you do see that...I'll walk past the window and see odds on something then I go home and check and I think it's twice as much you can get for the same bet. I put a bet on at the beginning of the season and it was 66-1 with bet365 and 126-1 with Betfair so it's almost double...you wouldn't be able to do that in betting shops, you'd have to walk around all the different shops checking the odds, it's not practical' (Nick, 26).

Many gambling websites also offer 'demo' features or 'practice' sessions where a person can engage in the gambling activity for free without staking any money. The player can therefore learn the game and understand the rules before gambling for real. Online poker was the preferred gambling activity of nine of the internet gamblers (60%). Online poker was usually the participants' first experience of playing poker. The discretion and anonymity provided through gambling online allowed participants to practice more skill-based gambling activities because in physical gambling

environments a lack of skill and etiquette may prove humiliating for the player. Online gambling removes the potential for embarrassment caused by inexperienced play. Gamblers can practice for free online (for points instead of money) until they feel confident enough to play with their own money and/or enter live tournaments:

'Well to begin with practice. Not playing for actual money, just so you can learn'
(Tim, 37)

However, these games often have much better odds for the gambler than real games and so the player may find the game more attractive through increased familiarity (Sevigny, Cloutier, Pelletier & Ladouceur, 2005). Additionally, gambling in practice modes may build self-efficacy and potentially increase perceptions of control in determining gambling outcomes motivating participation in their 'real cash' counterparts within the site (Griffiths, Parke, Wood & Parke, 2006). In a sample of 563 online gamblers, McBride and Derevensky (2009) found that 77% of online gamblers reported having played on practice, or free sites. Additionally, Griffiths *et al.* (2009) found in the British prevalence survey, that 29% of adolescents reported playing free games on the internet.

Nevertheless, because of the much reduced economies of scale, and because of physical limitations in customer base, it is not cost-effective to provide poker gambling opportunities at low stakes in offline gambling environments. However, online, beginner poker players have the opportunity to practice for free, or with very small stakes to gain experience.

'On the internet you can gamble on tables that are one [cent] or two [cents] and the average pot prize is a dollar...but you couldn't gamble like that in the casino, you can't gamble with pennies' (Joseph, 28).

Furthermore, poker tournaments are often cheaper online:

'The live tournaments are quite expensive compared to the online ones' (Emma, 23).

'Because of the different tournaments that are on there...They have some real big tournaments that you can get in really cheap for...on a Sunday night there's a million and a half dollars tournament. My mate got in it for about \$6 just through satellite and he ended up winning \$1200' (Tim, 37).

Offline, inexperienced gamblers may be reluctant to risk significant amounts of money

in a skill-based activity but the internet has removed financial barriers to begin participating in skill-based activities such as poker, thus increasing the attraction to gamble for inexperienced players.

5.3.1.4 Greater online variety

In addition to greater opportunity and value for money, is the fact that the internet offers a greater variety of games. A common reason for gambling is the opportunity 'to win money'. Here, the internet has facilitated people playing. The popularity of online poker could be facilitated as the result of participants perceiving that it has become a more profitable activity because of the improvements that developing IT has made to the situational and structural features of poker playing. Traditional poker venues have structural and situational limitations. For instance, players must be in the location of the poker room and must find an unoccupied seat. Online poker provides players with unlimited access to a variety of different poker games and tournaments.

'When you play live, you get dealt a hand the cards get taken in, the dealer shuffles them, you probably get like 20 hands an hour, if you play online and you're playing eight tables, the cards get dealt quicker...obviously it's much quicker online so you could be playing 200 hands an hour' (Anthony, 29).

Online gambling provides the medium in which players have the potential to participate in multiple games of poker simultaneously. Gamblers perceive that because poker is largely skill-based, they will become more profitable per gambling session because they are no longer restricted to playing in only one game at any given time. Playing multiple games reduces the risk of losing too much money:

'If you're playing seven tables or six tables at the same time you lower the risk because on one hand you can get beaten but if you run one hand a hundred times and your top 10% favourite every time, on one table you might lose but you play seven or eight tables at the same time or whatever' (Martin, 26).

As the popularity of online poker has increased in recent years, participants perceive that there is a greater chance to make money playing poker online than there is offline because of the opportunity to play multiple games at the same time:

'If I want to earn money it's far better to play online because just you can play more' (Anthony, 29).

'I like to have six games going at a time. The reason I like to play a lot of tables at the same time is because if you play one table you can fluctuate quite highly whether you're winning or losing, but if you play several tables at the same time you get a more steady pattern of winning and losing' (Martin, 26).

Some gamblers perceive that because poker is largely based on skill, they will become more profitable per gambling session because they can now play more than one game at a time. At a basic level, the internet is providing more simultaneous opportunities to win money and as a result some poker players appear to be now making a living playing online poker. Without the internet, very few poker players would be able to make a successful career from playing in the live tournaments simply because of the relatively small number of tournaments available. On the internet, there is always a tournament a player can enter, so a player can potentially play more online than offline. The availability of games online is much greater than a person would get offline, which is why some people are choosing to gambling online:

'There's more sites out there for you to use, whereas if you play live in Nottingham you've only got Dusk 'til Dawn or the casinos, so there's a lot more places online available to play' (Emma, 23).

Some people also liked the internet because it offered the chance to bet 'in play'. This would not really be feasible in offline gambling but a gambler can easily place a bet during a game while watching it on television at home:

'Now as well you can bet in play, so even though Liverpool score the first goal and make it one-nil, you can still bet on who's going to score the next goal' (Philip, 44).

5.3.1.5 A safe world

The structural and situational characteristics of internet gambling can reduce social barriers that exist for offline gambling venues. The impact of engaging in a potentially stigmatised activity is significantly reduced online because the gambling can be performed in isolation, anonymously, and in secret. Internet gambling may therefore appeal to more people because the anonymity it provides removes some of the negative stigma attached to gambling. This could lead to increased desire to engage in gambling behaviour because the person knows they will remain anonymous. This may be especially attractive for female gamblers as traditional gambling venues are typically seen as very masculine places:

'Nowadays there are more and more women that go into bookies but certainly, for females it [internet gambling] affords them that opportunity...without that self-inflicted stigma if you like, or even feeling threatened' (Damian, 44).

'It will appeal to more people and allow more people to gamble because some people don't like the social stigma perhaps of going to a casino so they think alright go online, so it's a sort of a guilty pleasure almost and like online bingo sites are attracting a lot more women, and I can understand that casinos are quite masculine environments...so women might find it more attractive' (Kristian,26).

Anonymity is seen as a key advantage of online gambling compared to offline gambling:

'The other thing is, if you're gambling in a bookies, people are going to notice, oh there's her off back in there, whereas internet gambling is hidden away, there's only you and your computer' (Fran, 57).

Professional gamblers liked being anonymous because it meant that they gave away very little information about themselves. Professional players did not want to give away information that might give their opponents an edge:

'I don't like to give any information away to anybody. I don't want anybody to know anything about me because it could help them get leads on me' (Martin, 26).

Another advantage of being anonymous is that there are fewer distractions online. A person can play in their 'own little world':

'I can then just totally focus on the gambling, I don't have to think about that person there, or that person there or having to go to the teller, it's just me in my little world' (Nathan, 34).

Some online gamblers also said they do not gamble in offline casinos because they do not like the venues and that they can be 'intimidating' which is why they prefer the internet.

5.3.2 Reasons for not using the internet to gamble

The reasons the non-gamblers gave for not gambling included non-enjoyment reasons such as gambling does not appeal, they are not interested in it, they would find it boring, and a lack of knowledge on gambling activities. Non-gamblers reported financial

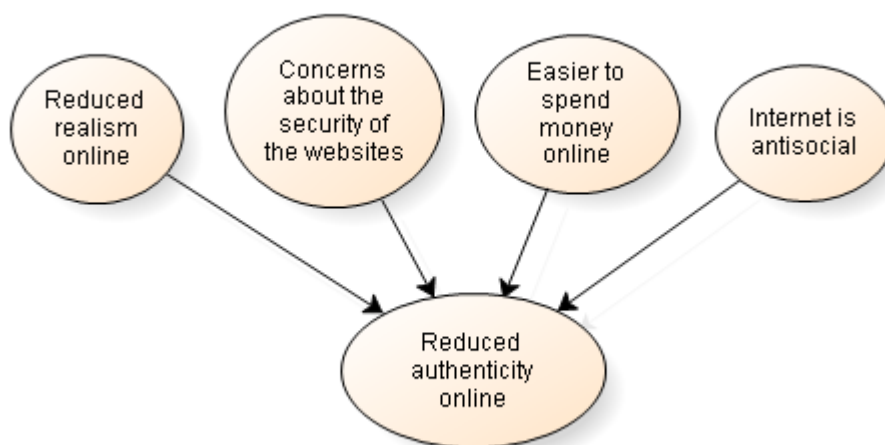
reasons for not gambling. They said they could not afford to gamble and would not want to lose money. They would rather spend their money on other things, or they said they were financially solvent and did not need to go looking elsewhere to boost their income. These were the same reasons they did not gamble on the internet. However, there was one additional reason given as to why they did not gamble on the internet – they did not trust it.

'I use the internet all the time. I buy stuff off the internet all the time but I just don't trust internet gambling, I don't trust it' (Charlie, 25).

5.3.2.1 Reduced authenticity of gambling online

The overriding theme as to why gamblers choose not to gamble on the internet appears to be that the authenticity of gambling is reduced online. Issues surrounding the trustworthiness of websites, the reduced realism online, the asocial characteristics of internet gambling, and the reduced psychological value of electronic money all create a reduced authenticity of gambling which may lead to the view that internet gambling is more dangerous. These are discussed in more detail below.

Figure 2: Inhibiting factors of engaging in online gambling behaviour



5.3.2.2 Reduced realism

Poker is largely a game of social and psychological information to be played against other human opponents. However, online poker rooms do not allow for the subtle communication between players that is integral to the psychological aspect of the game, making the games potentially less authentic and less enjoyable than they could be for those who like the non-verbal communication aspects (Golder & Donath, 2004). This

appeared to be a major reason as to why offline gamblers did not want to play games like poker online. When asked why he would not gamble online, one participant responded:

'It's against a machine. It's not people...There's no people. No enjoyment in the slightest. There would be no joy in winning money...It's just not the same' (Richard, 57).

One internet gambler, whose main gambling activity online was sports betting, also participated in gambling offline such as playing poker but would not enjoy playing poker on the internet because it is not as real:

'I don't like playing it online. It just doesn't feel right, playing poker on a screen' (Nick, 26).

Therefore, some internet gamblers reported that certain gambling activities are much better offline than online. Over a third of the offline gamblers felt that gambling on the internet would seem less real because they were not actually physically handling the money, whereas if they were to win in the bookmakers they would receive the winnings in cash, and therefore the enjoyment would be greater because it feels more real:

'It does feel more real. You still lose the same amount of money...but it feels more real...especially when you win because you get the cash straight back, [online] it's just a number on the computer' (John, 37).

In a small pilot study based on four case studies, Griffiths and Parke (2007) also found that one of the barriers to internet gambling was the lack of the 'physical' transaction of collecting winnings as this was highly rewarding to the participants. Some participants also reported greater enjoyment or a better atmosphere by actually being present at the event. These participants stated that they got more enjoyment from being at the casino or a racetrack, than they would from playing online:

'You need to hear a buzz, whether you're at the race track or dog track or casino, you need to have a buzz in the room...you need to hear people swearing and cursing and damning there luck and cheering' (Richard, 57).

It is interesting to note that some of the internet gamblers also stated that they preferred being at the event because the atmosphere is better:

'You get chips in front of you, you get to see your cards and hold them, it's the people as well, you get to see the people and, I mean there are some characters there!' (Joseph, 28).

'I prefer the atmosphere of playing live' (Emma, 23).

5.3.2.3 Internet is antisocial

One consequence of internet gambling has been the capacity to reduce the fundamentally social nature of gambling to an activity that is essentially asocial. Research has shown that those who experience problems are more likely to be those playing on their own (e.g., those playing to escape; Griffiths, 1995). Most problem gamblers report that at the height of their problem gambling, it is a solitary activity (Griffiths, 1995). Griffiths *et al.* (2006) suggest that gambling in a social setting could potentially provide some kind of 'safety net' for over-spenders, that is a form of gambling where the primary orientation of gambling is for social reasons with the possibility of some fun and chance to win some money. All problem gamblers (online and offline gamblers) reported gambling alone. Internet gamblers preferred gambling on the internet because of the anonymity it provided. Here, players can choose to hide information about themselves from other players if they so wish.

However, the internet still offers the capacity for social facilitation as individuals in games like online poker and online bingo can communicate online via computer-mediated communication (CMC) within the game itself and even post-gambling through involvement in online gambling web-communities. None of the problem gamblers reported communicating online but many of the non-problem internet gamblers reported using this facility:

'I've met some...you can't call them friends, but I've met some very good associates through it in all parts of the world...it's great' (Clive, 47).

It was also a good opportunity to talk about the game and learn more:

'I don't mind talking to them about the game because...I love the game, I love talking about it so I'll talk about it with people I know who are good players' (Martin, 26).

People could also communicate online to congratulate other players on a good hand or ‘wind people up’ (i.e., aggravate them) to perhaps put them off their game:

‘Some of it’s just to say ‘oh nice hand mate’ you know what I mean, ‘good game’, or some people like, you rile them up’ (Joseph, 28).

Nearly a third of the offline gamblers also felt that internet gambling was not as real because it was more antisocial. The non-problem offline gamblers enjoyed the social aspect of making a night of gambling, by going to the casino for a night out, or going to the dog track for the day. However, by gambling online a person loses this social element:

‘I think because you can’t see the other person, because you’re sort of sitting there in a room by yourself you lose...for me, the other elements of gambling that appeal so the face-to-face contact, the having a drink with friends, being in a room full of people’ (Kristian, 26).

‘It’s missing the main bit of being around people, playing, it’s like you just see the cards playing and you see someone’s name’ (Carlos, 19).

It could be that problem gamblers may be drawn to use the internet to gamble because it provides them with anonymity and allows them to be alone when they gamble. Non-problem gamblers may be more likely to gamble in offline venues as they allow for a preferable kind of social interaction.

5.3.2.4 Easier to spend more money online

As mentioned previously, electronic payment can lower the psychological monetary value, thus leading to a ‘suspension of judgment’ (Griffiths *et al.*, 2006; Griffiths, 2006c), and potentially stimulating further gambling. There is anecdotal evidence to suggest that people gamble more using electronic payment than they would when handling real cash (Griffiths, 1999a). All offline and online gamblers were aware that electronic money does not seem as real and therefore could encourage people to spend more.

‘When I was gambling in the bookies I would not even consider putting £100 on a horse, but now when I gamble heavily on the internet, thousands and thousands of pounds...I’ve put a £1000 on a spin of a roulette wheel, and it didn’t matter...it’s not money when it’s online, it’s just numbers, it’s not financially having money’ (Nathan, 34).

'It's much more brutal on the internet because it's not cash. I could never have gambled the way I was gambling if I had to go to a bookies and hand over' (George, 53).

'I think the reality of having your actual money in front of you in your hand in cash or in chips...it's harder to spend it than it is just to click it away online, just to click a button and it's gone' (Martin, 26).

Chips and tokens can 'disguise' the money's true value but it would seem that the psychological value of electronic money may be reduced even more and can lead to people spending more money than they would if they were gambling offline. Furthermore, many participants reported that they were cautious about trying internet gambling because they thought it might lead them to spending more money:

'I would probably spend more on the internet...because you haven't got money in your hands you tend to spend more. When you've got the actual cash you are more aware of what you're spending' (Rose, 21).

'With a computer it's just a number...it means fuck all, I mean if you've got money in your pocket and you're taking that money out and you lose it and you're passing it to someone else, it's different, you can see the money going and you can see the money when you win it' (John, 37).

5.3.2.5 Security of the websites

Given the nature of online gambling as a largely unregulated industry, fair play practices are difficult to monitor as there is less evidence of the authenticity and fairness of gambling outcomes (Monaghan, 2008). Many of the offline gamblers were very unsure about how safe internet gambling actually was:

'I didn't trust it because you don't know who's manipulating it' (Rick, 26).

Although the popularity of internet gambling is increasing the majority of individuals still do not engage in online gambling. High levels of mistrust and cynicism amongst players regarding online gambling have been reported, with security concerns and legitimacy cited as the main reasons for not playing online in a survey of U.S. poker players (Ipsos Reid, 2005). Even internet gamblers may have doubts about how secure the websites are, as one internet gambler reported a case of where an internet sites security was breached:

'There have been cases reported where security has been an issue...they had a case where basically one of the websites had a problem because...someone interrogated the software so they knew exactly what card was going to come and I think the website found out...so there is a slight concern' (Anthony, 29).

In a survey of international internet gamblers, over a third of respondents claimed to have had a dispute with an operator, with less than half of these saying it had been resolved successfully (eCOGRA, 2007). However, the concern of the participant above was not great enough to prevent him from playing. Here, the internet gamblers were more likely (than the offline gamblers and non-gamblers) to believe that the gambling websites are secure:

'I've never had any problems with any of them. They've got to be secure, they've got industry watchdog so I'd have thought so' (Tim, 37).

However there was a perception that some websites were more trustworthy than others:

'I generally play on sites like Ladbrokes or Poker Stars which are really big sites so you think...you generally trust a big company' (Anthony, 29).

The trustworthiness of internet gambling also depends on the particular activity the player is gambling upon. For example, one internet gambler who placed sports bets online did not trust the poker websites:

'I've got a bit of cynicism about poker online...how do you know they don't know your cards, how do you know that the guy on the end of the screen is actually another guy or is he a bookie so he might know what cards you've got' (Nick, 26).

5.3.3 Differences between problem online gamblers and non-problem online gamblers

Problem gambling is characterised by preoccupation, tolerance, withdrawal, escape, chasing, lying, loss of control, illegal acts, risking significant relationships and bailout, as indicated in the DSM-IV (APA, 1994). The problem online gamblers and problem offline gamblers clearly showed signs of these but whether there are differences between problem online gamblers and problem offline gamblers in terms of the impact the problem behaviour has on quality of life and well being was also explored and is discussed below. However, in terms of the differences between problem online gamblers and non-problem online gamblers, besides the DSM-IV criteria, there were

very few differences. This suggests that the motivations for gambling online are very similar whether a person is a problem gambler or not. Both problem online gamblers and non-problem online gamblers reported gambling online for the convenience, accessibility and availability, and being attracted by the free offers on websites. However, there was one main difference between the two groups, namely, problem online gamblers were more likely to gamble online for the anonymity:

'It's better just being here now, being here alone, betting online and stuff'
(Nathan, 34).

Additionally, besides the professional gamblers who reported spending huge amounts of money gambling online to make a living, the problem online gamblers reported spending considerably more money online than the non-problem online gamblers.

'I had my biggest, my biggest single bet that I've ever had, about 2 and a half weeks ago, where I put £2,000 on a horse, right, that's one single bet, that's £2,000' (Clive, 47).

The non-problem online gamblers spent much less money gambling online:

'Online I play \$5 tables so it's about £2 or £3 table' (Emma, 23)

However, this is one of the characteristics of problem gambling as reported in the DSM-IV (APA, 1994) and is characteristic of offline problem gambling too.

5.3.4 Differences between problem online gamblers and problem offline gamblers in terms of quality of life and well-being

To date there has been very little research examining the differences between traditional offline gamblers and online gamblers, and whether problem online gamblers differ from problem offline gamblers. Three main categories relating to the effects of problem gambling on health and wellbeing were generated. These were (i) mental health problems, (ii) physical health problems, and (iii) emotional health problems. These core concepts enabled the reported experiences of problem gamblers to be understood in terms of the effects of problem gambling on quality of life and wellbeing. Mental health problems, physical health problems, and emotional health problems were all apparent in the accounts from the problem gamblers.

5.3.4.1 Mental health problems

Mental health problems were experienced by nearly all of the participants (n=12) and included depression, anxiety, panic attacks, stress, suicidal thoughts, and suicide attempts. Mood states such as anxiety and depression have been frequently linked to pathological gambling (Blaszczynski & McConaghy, 1989). Prior mood can account for continuation of gambling despite successive losses among problem gamblers (Dickerson, Cunningham, England, & Hinchy, 1991). Therefore, people who are anxious and/or depressed may gamble to relieve these negative psychological states that may be reinforcing in the short-term, but may make problem gamblers more anxious and/or depressed in the long term (Raylu & Oei, 2002). Health problems are quite common among problem gamblers and many experience depression, anxiety, stress, and even suicidal thoughts. All of these mental health problems were evident in the majority of accounts of the problem gamblers (n=12). Most of the participants (n=10) reported feeling depressed at some time or another as a direct result of their gambling problem:

“Yeah, depression...I went through a period of real bad depression” (Alex, 32).

Many of those that felt they had suffered from depression had not had this clinically diagnosed. One participant felt that his gambling could temporarily relieve him of his depression as it was a way of escaping from the real world.

“Depression definitely but then the gambling always brings me out of that, manic depressive. And stress and panic attacks, hyperventilating, stutters sometimes. I get really bad stutters” (Nathan, 34).

However, it is still not known whether depression is a result or cause of problem gambling (or both). Although there were more problem offline gamblers in the sample than problem online gamblers, the mental health problems appeared to be more severe among the online gamblers, with all online problem gamblers suffering from depression at some point. In relation to anxiety, this was experienced by almost half of the participants (n=6). This was evident among both the online and offline problem gamblers.

“I started to get anxiety feelings...and I was starting to get panic attacks...So obviously it was impacting on me psychologically and on a deep emotional level but I wasn't aware of it...but I was worried, deeply worried, about it” (Mary, 51).

Henry (1996) suggested that problem gambling is associated with unresolved trauma-related anxiety. After treatment for those with reported trauma history, there was a reduction in problem gambling behaviour and reduced anxiety. Furthermore, Blaszczynski, McConaghy and Frankova (1991) showed that gamblers who had successfully completed treatment showed a noticeable decrease in anxiety compared to those who were still gambling. However, similarly to depression, it is unclear whether anxiety is the cause or result of problem gambling (or both).

Suicide, suicidal ideation, and suicide attempts are also common among problem gamblers, especially those who are depressed (Bland, Newman, Orn & Stebelsky, 1993; Crockford & el-Guebaly, 1998; Cunningham-Williams, Cottler, Compton & Spitznagel, 1998; McCleary, Chew, Feng et al., 1998; McCormick, Russo, Ramirez & Taber, 1984). Financial debts and relationship difficulties have also been identified as additional risk factors for suicide among problem gamblers (Blaszczynski & Farrell, 1998). Almost a third of the participants (two online gamblers and two offline gamblers) had been close to committing suicide.

“I’ve been close to committing suicide a few times” (John, 34).

“You wouldn’t believe the hell I went through...Thinking I was going to lose everything, so yes, I did get stressed, I did get depression...I even contemplated suicide” (Clive, 47).

It was clear that both online and offline problem gamblers experience mental health problems as a result of their gambling problem. There did not seem to be much difference between the two groups, except that a greater majority of online gamblers seemed to be suffering or had suffered from depression at some point. Experiencing anxiety, stress and/or contemplating suicide were evident in both the online and offline problem gamblers.

5.3.4.2 Physical health problems

Some of the participants (two online gamblers and two offline gamblers) also reported physical health problems such as sleeplessness, heartburn, malnutrition, and general neglect of their health. Their problem gambling behaviour meant they were not looking after themselves properly:

“You neglect your health. You might have a dentist appointment but you think hang on that’s going to cost me £70 or whatever, that’s £70 gambling money so I won’t go to the dentist. You won’t go to the doctors because you’ve got to pay for a prescription, or whatever” (Robert, 38).

One participant also reported that he would not even buy food because that money could be used for his gambling, and that this led to poor health as it resulted in malnutrition and sleeplessness:

“You know, when I’m gambling I don’t waste money on food...there were times when I had a bag of crisps to last me all weekend...I’ve suffered malnutrition...stress, anxiety, sleep deprivation, chest pains” (Damian, 43).

Physical health problems were reported by two of the online gamblers and two of the offline gamblers. Therefore there appeared to be no difference between offline and online problem gamblers in terms of experiencing physical health problems as a result of their gambling problems in this particular sample.

5.3.4.3 Emotional health problems

All 15 of the participants reported a feeling of low self-esteem and low-self worth because of their problem gambling. Other negative emotions experienced by the problem gamblers include anger, feeling ashamed or embarrassed, frustration, humiliation, and/or irritable if they could not gamble. On reflection, one ex-problem gambler was able to report how her behaviour was completely out of character and was caused by her gambling problem:

“Whilst still gambling I was so irritable, it was horrendous. Now I cannot believe it was me...It was, it is fair to say, completely out of character for me to have been gambling” (Fran, 57).

Problem gamblers often experience frustration, anger, and guilt following significant losses (Parke, Griffiths & Parke 2007). Feeling guilty was common in the accounts of the problem gamblers. Seven participants explicitly talked about the guilt they felt. All of these participants had significant others in their lives (i.e., partner, or parents) and they felt guilty about how their behaviour was impacting on them. These participants felt guilty about hurting loved ones and/or the amount of money they spent:

“I don't think I realised that I had a very, very severe problem till the day I spent all my wages within a couple of hours of them hitting the bank. Giving in to myself that I did have this problem was horrendous. I was absolutely riddled with guilt” (Fran, 57).

The following participant felt so guilty about his behaviour that he gambled to forget about the guilt:

“I know that deep down I am incredibly guilty but that's why I gamble more...to stop thinking about the guilt. It's a whole perpetual cycle that's never ending because once I stop, that's why I always bet on four different things and I've got horse racing going on and I've got a football match going on and I've got '5Live' [a UK radio station] and I've got poker and my Scrabble, and whatever else because the more things that are going on then the less I have to think about the guilt and everything else” (Nathan, 34).

Both online and offline gamblers reported feeling guilty about their problem behaviour, but, it seemed that rather than whether someone gambled online or offline, what was more important was whether someone had a significant other in their lives which had an effect on how guilty they felt about their behaviour.

5.3.4.4 Additional impacts on quality of life

Additional negative impacts were associated with problem gambling. Most notably their gambling (somewhat predictably) caused them financial problems, as well as relationship problems, and work life problems. Three online gamblers and one offline gambler also reported criminal offences as a means to support their gambling problem.

“I started embezzling money from my work...I was actually charged with embezzling £267,000” (George, 53).

“I have stolen from employers, I've been fired probably four or five times for theft from employers” (Nathan, 34).

One participant talks about how he stole from his partner and from several employers and ultimately faced time in prison because of his criminal activities to fund his gambling problem:

‘The first one was theft from employer...Then there were two that were quite close together and I got probation order and then I got a custodial sentence’ (Robert, 38).

Hall *et al.* (2000) reported that compared to the general adult population, those with lifetime problem gambling were significantly more likely to have recently engaged in illegal activity for profit, and to have been incarcerated. Toce-Gerstein *et al.* (2003) also found that most of the severe problem gamblers reported committing illegal acts to support their gambling. Yeoman and Griffiths (1996) found that 4% of all juvenile crime (most notably theft) during one year in one English city was associated with gaming machine use. Other research has found that problem gambling is associated with criminal activities (Brown, 1987; Lesieur, 1987). This offers limited evidence that a minority of individuals commit crimes in order to ‘feed their addiction’. However, Meyer, (1997) points out that in many cases the criminal behaviour preceded the gambling behaviour and points out that in at least some cases, the factors predisposing one to an addiction may also predispose someone to criminal activity.

All problem gamblers in this study reported engaging in gambling to manage negative emotional states. Gambling became an escape from problems in the real world. It has been suggested in the General Theory of Addictions (Jacobs, 1986) that addictive behaviour patterns occur when people use a substance or activity to alter their arousal levels to escape from the reality of their existence. Using gambling to block out certain thoughts and feelings in their lives can lead the problem gambler to engage in the behaviour at an increased frequency. For instance:

“To me it’s my escape from everything else that’s going on in my life. I just focus on the gambling really, nothing else matters” (Nathan, 34).

Wood and Griffiths (2007) also found that ‘gambling to escape’ was the main characteristic of the gambling experience that facilitated the continuation of problem gambling among the 50 problem gamblers they interviewed. Problem gambling also leads to a high preoccupation with gambling where gambling becomes the focus of their life. They become motivated by getting money to gamble with and become preoccupied with when they can next gamble:

“Thinking in the back of my mind... if I’ve got an hour to spare today, maybe I can just go and have a quick bet in the arcade and maybe win something, so it’s affected me because it’s in the back of my mind...It’s almost like a poison chewing away in the mind” (Patrick, 42).

Preoccupation with gambling was a consequence for a majority of the participants (n=9),

both online and offline gamblers, and also led to one participant reporting on the withdrawal symptoms she experienced when unable to gamble.

“Whilst in the grips of my addiction I could hardly wait to get on the computer. I became so obsessed that I had withdrawal symptoms if I could not get online” (Fran, 57).

Sometimes the winning becomes irrelevant and two participants reported preferring to lose as a form of punishment for their gambling behaviour which they were ashamed of:

“There came a time, this is the thing that probably scares me, when I perhaps gambled to lose so I could punish myself...people find that very difficult to relate to but winning became irrelevant really...it just became a sort of self-beating or psychological self harming...but there was a period of time when winning was irrelevant. In fact, I’m not even sure if I would have been happy if I had won” (Damian, 43).

Often the goal for the problem gambler is to keep gambling for as long as possible (Griffiths, 1995; Hing & Breen, 2001) and care little about winning but staying in the game. The fact that some problem gamblers reported gambling to lose resonates with Bergler’s (1957) explanation that compulsive gamblers have an unconscious desire to lose and punish themselves. Here, gambling becomes more about the feelings and emotions associated with the activity. It is argued that what they are chasing is oblivion, repeatedly returning to gambling, even though they often do not expect to win, and they continually return to gambling to chase an illusory feeling of peace (Rugle, 2004). When gamblers lose so much that they feel they are ‘in too far to quit now’ they become entrapped. They have passed the point at which they could safely cut their losses and, therefore, they believe they must continue to play if they are to have any chance to recover (Walker, 1992). Inevitably, this irrational thinking leads to ‘chasing’ losses. Problem gamblers often try to ‘chase’ their losses but instead they get deeper into debt and become determined that a big win will repay their loans and solve all their problems (Breen & Zuckerman 1999; Griffiths 2003b; Lesieur & Custer 1984). Lesieur (1979) describes ‘chasing’ behaviour as the most significant step in the development of problem gambling. It consists of gambling and losing, followed by more gambling to ‘even the score’. Chasing behaviour can occur on another day (between-session chasing) or it can occur on the same day (within-session chasing). Many of the problem gamblers reported chasing losses:

'Well I remember the exact day...starting to chase my losses...I just remember losing £50 and being absolutely gutted and thinking I've got to go back and win it and I remember losing another £30 and it just spiralled downhill from there' (Patrick, 42).

'I was so upset and also angry at myself for actually losing that amount of money I was trying to think well, if I could just put it right...I've lost that much, I've got to go on that little bit longer to be able to try and get something back...so it was chasing' (Mary, 51).

'A gambler always steps over that line and goes 'fuck it' I'm going to go for another £100 and win that money back and then it's another line and another line and it just continues... 'I'll go to a bookies with all the best intention of only spending £20 on dogs but then I lose it and it's like play catch up, you're trying to catch up with all the money you're losing and then next thing you know you're into hundreds and you've lost the lot' (John, 34).

'If you were losing, it was obviously despair, and then you started definitely trying to get back the money you had lost...you would scheme as to how you could get that money back' (George, 53).

'I'd come to a stage where I was really down and I was chasing it and that's when I'd just gamble on anything...but then I'd soon go back to right I'm going to win again and then if I lost it was like shit I need to win, big time. And then if that loss became greater and greater...my betting behaviour became manic and more extreme...betting on anything' (Alex, 32).

Much research has also found that problem gamblers are significantly more likely to experience drug and/or alcohol related problems than non-gamblers or social gamblers (Griffiths *et al.*, 2010; Huang *et al.*, 2007; Petry *et al.*, 2005). Almost a third of the participants (n=4) reported that they also had or currently have an alcohol problem:

"I did have a drink problem as well. But I didn't know that I'd got a drink problem until I went to the treatment centre...they said...you've got a problem with alcohol as well, and I was like yeah, alright I can control it, which was the denial again...it took me about two weeks to accept...so yeah, there was a dual addiction with me" (Alex, 32).

These results add support to previous findings which have shown that gambling (and more specifically problem gambling) and alcohol consumption are co-occurring behaviours (el-Guebaly, Patten, Currie *et al.*, 2006; Griffiths *et al.*, 2010; Griffiths & Sutherland, 1998; Lesieur, Blume & Zoppa, 1986). However, half of the online problem gamblers (n=3) had a problem with alcohol. This is worrying as one concern with internet gambling is the lack of protection for vulnerable players, such as those under

the influence of alcohol or drugs. When a person gambles at home on the internet, there is no way for an online gambling operator to know whether that person is under the influence of alcohol (or other intoxicating substances) when gambling, whereas in an offline venue there would be responsible gambling measures in place to prevent a clearly intoxicated person from gambling. Therefore if a person is intoxicated while gambling at home, this may lead to an increase in expenditure and/or irrational play and could potentially lead to a greater impact on emotional and mental health problems.

5.3.4.5 Other differences between problem online and problem offline gamblers

In these interviews, very few differences were found between problem online gamblers and problem offline gamblers. More online problem gamblers had overcome their problem and managed to abstain from gambling for over 12 months (except one person who had abstained for seven months). A few of the offline problem gamblers reported opportunity gambling, such as ‘nipping in to the bookies’ for a quick bet if passing. Interestingly two of the offline gamblers had worked in gambling venues. One had worked on the bar in a casino, and the other had worked in betting shops in the past. They both felt that working in a gambling environment may have contributed towards the development of their gambling problem.

‘It didn’t help that for over a year and a half I worked at a betting shop as a manager’ (Robert, 38).

‘Working in the casino didn’t really help...You just surround your world with bright lights and the only sort of place where you spoke to anyone else was being in other casinos and you pretty much knew everyone’ (Max, 23).

Shaffer and Korn (2002) have reported that casino employees and those working in other gambling venues may be at greater risk of developing a gambling problem compared to the general population because of the greater exposure to gambling they experience. It is interesting then that of the problem offline gamblers, two of them had worked in gambling environments for a considerable length of time and both felt that this had made their gambling problem worse. In a study looking at the health risk behaviours of casino employees, Shaffer *et al.* (1999) found higher levels of gambling, smoking, drinking and mood disorder in casino employees compared to the general population. Then again, workers might seek employment in the gaming industry to satisfy their gambling interests. These two participants had both gambled previously to working in the gambling environment so there reasons for working in the gambling

environment are unclear.

However, none of the problem online gamblers reported opportunity gambling. It may be that problem offline gamblers can be tempted more when out because of the high number of betting shops and casinos that now exist. Additionally, three of the problem offline gamblers reported only telling others when they win. If they lose then they will keep this secret.

'People when they are gambling always tell you when they win but they very rarely...I mean that just comes down to human nature in my belief, that you're not going to tell somebody something negative' (Max, 23).

None of the problem online gamblers reported that they only told others of wins. However, this is likely to be because online gambling is potentially more secretive, so they do not let others know that they are gambling on the internet at all. For an offline gambler, it is much harder to hide the fact that they gamble so family and friends are likely to know that they gamble anyway, but to make it appear that they do not have a problem with gambling then they will only tell of the wins they have.

In terms of gambling affecting work performance, online gamblers were more likely to report their gambling problem did impact on their work. However, no problem online gamblers reported that their gambling problem did not affect their work performance, whereas three problem offline gamblers reported that gambling did not impact on their work. As the internet is now increasingly available in the workplace, this could be a serious concern (Griffiths, 2009). Many organisations have unlimited access for all employees and often people can participate in online gambling without arousing suspicion among management or co-workers (Griffiths, Parke, Wood & Parke, 2006). Work efficiency and productivity will consequently be affected and effective gambling policies for the working environment will need to be implemented by employers (Griffiths, 2002; 2009). Furthermore it can be hard for employers to spot problem gamblers as it has been commonly described as a 'hidden' addiction (Griffiths, 2002).

More problem offline gamblers had been criticised for their gambling behaviour than problem online gamblers but this is likely because offline gambling is harder to hide from others whereas the family members of the online problem gamblers perhaps did

not realise how bad their gambling behaviour was. Problem offline gamblers were more likely to report starting gambling due to exposure to it at a young age:

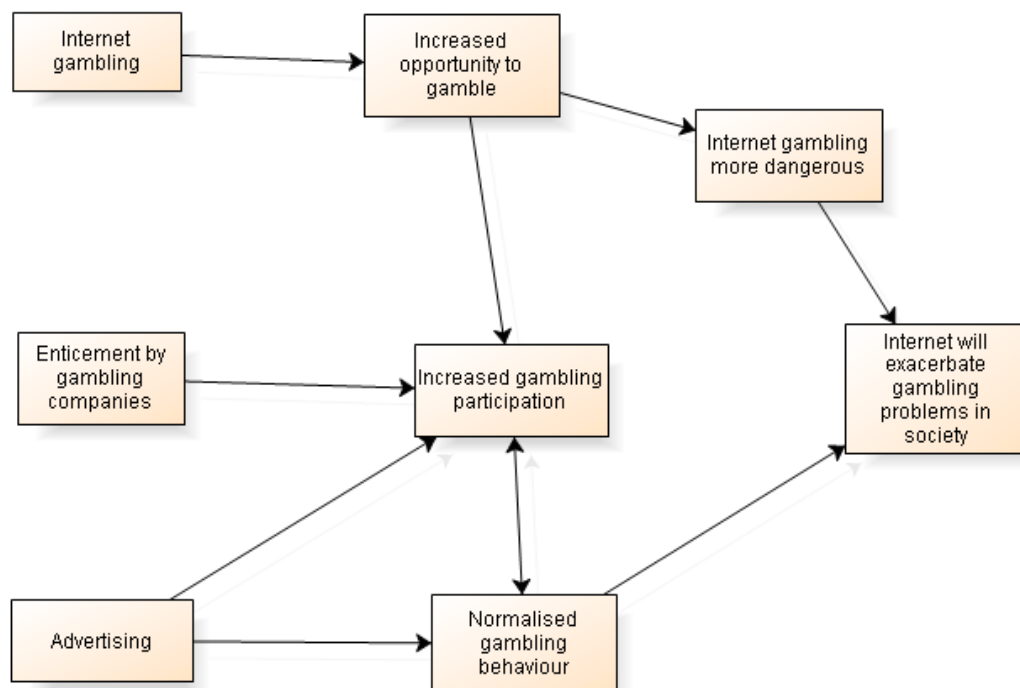
'I first got into gambling when I was a kid because my dad...he gambles as well...he used to send me to bookmakers everyday and he'd send me with a slip a bookies slip' (John, 34).

As internet gambling is relatively new and only really increased in popularity in the early 21st century, perhaps in the future there will be problem online gamblers who had been exposed to internet gambling at a young age.

5.3.5 What impact will the internet have on gambling behaviours?

What clearly emerged from the interviews with internet gamblers, offline gamblers and non-gamblers, is the perception that internet gambling is more addictive and potentially dangerous for vulnerable people, and will ultimately exacerbate gambling problems in society. The internet has increased the opportunity to gamble and this coupled with the advertisements and gambling companies enticing players (sometimes involving unscrupulous practices) has led to an increase in gambling participation, particularly internet gambling which is now the fastest growing form of gambling. Advertising, celebrity endorsement, and the (so called) celebrity status afforded to poker stars, has almost normalised gambling behaviour causing people who otherwise would not have gambled to start participating in this leisure activity.

Figure 3: What impact will the internet have on gambling behaviours?



5.3.5.1 The internet will exacerbate gambling problems in society

Many participants, particularly problem gamblers, were concerned that the internet will lead to a huge increase in gambling problems in society:

‘The situation with internet gambling where it’s all hidden is like a time bomb and it’s an epidemic and it’s going to...I think through time, affect so many people...absolute epidemic and I think that every year that goes by there’s going to be hundreds more affected’ (Fran, 57).

‘I think it’s an epidemic waiting to happen. A lot of people now go to GA and their gambling has got worse because of the internet, and you can do all these roulette things online, I think it’s definitely an epidemic just waiting to kick off’ (Nathan, 34).

Participants likened gambling problems as an epidemic waiting to happen, which may be more likely to affect younger people:

‘I think the craze that’s coming up with younger people...I don’t know about yourself but the number of problem cases will rise rapidly with problem gamblers in months, years to come’ (Jeff, 42).

‘I think the government should do something about it because I think it’s really bad. And it’s getting worse. It’s not just me. I’m just a single bloke, but...people

are spending the giros, their benefits and not feeding the kids and...it's everywhere. People don't see it, but it is, it's fucking everywhere' (John, 34).

There is almost a sense of injustice among some of the problem gamblers because the government is not doing enough to help problem gamblers and prevent gambling problems from developing. Significant concepts to emerge in relation to the internet exacerbating gambling problems in society are the increased opportunity to gamble; increased gambling participation; the perception that internet gambling is more dangerous than more traditional offline forms of gambling; and that gambling has almost become 'normalised'.

5.3.5.2 Enticement from gambling companies

What was clear from the interviews was the belief that online gambling companies do not care about responsible gambling:

'I think the online gambling is totally crooked however there is no regulations so these companies can basically get away with what they want and they prey on people that have got problems' (Jeff, 42).

Gambling companies will target those players they believe to have a problem because that is where they make their money. However, it seems that participants believe this is the case for online and offline gambling companies:

'OK, morally they shouldn't let [problem gamblers] in, but these guys have got targets, they've got bonuses, they're not going to stop someone who's a gambling addict come in, because that's where they make most there money' (Nathan, 34).

However, the rise in internet gambling has been very rapid, and legislation concerning internet gambling has not kept up with this increase. The ability to use the internet to gamble challenges the legal foundation for gambling by offering access in an efficient and private way from distant locations. There has been a major shift by governments towards deregulation of the gambling industry which has taken gambling out of traditional gambling environments, and has led to increases in access and opportunity to gamble remotely (Griffiths 2006d).

The suggestion that internet gambling may be contributing to higher rates of problem gambling is of major concern. Furthermore, the internet is difficult to regulate and

police, and there is also the issue of gambling operators having to be more socially responsible in remote gambling environments. Smeaton and Griffiths (2004) found that many UK-owned websites practices were a cause for concern and have a lot to gain by being more socially responsible. Many sites have little or no age verification checks and most of the sites offered no reference or referral to gambling help organisations although the situation is changing fast. Internet gambling sites should also offer credit limits; self-exclusion facilities; built in pauses on the site; and reference to controlled gambling and helping organisations (Griffiths, 2003a).

Many participants feel that the online gambling websites are not doing enough to protect vulnerable individuals. Even offline gambling venues could do more to help problem gamblers, and should enforce self-exclusion measures:

'The problem is though, when I'm in my gambling mode I don't care and you can't stop me gambling...all these self exclusion things don't make a hoop of difference. Not one, well one person has stopped me going into a bookmakers because of the self-exclusion, most of the time it works only because I know that I'm self excluded so I won't go in but only one bookies has actually said no you can't come in, the other ones just let you bet' (Nathan, 34).

Although it is difficult to regulate internet gambling, it is clear that there is a need for better legislation. Griffiths (2003a) has suggested guidelines such as: the implementation of reliable age verification checks; setting credit limits and the ability to self-exclude from the site; having built in pauses on the site; and references to helping organisations, and links to online help sites. These guidelines should help minimise problem gambling. Internet gambling sites will use certain tricks to get people to gamble such as sending spam emails:

'I played a few bingo sites because I get emails through all the time. Join this bingo we'll give you £20 free. So I've joined...I've got all the free bets off the various different sites' (Nathan, 34).

'I'd never gambled other than...those football coupons maybe once every three or four months and that would be maybe a fiver at the most. I did about a pound on a sweep at the grand national or something like that and that really took me up to the age of 45 [years] and...I spent a lot of time on the internet and I was aware of the gambling sites but I never bothered with them, and I would get spam emails often, you know, deposit £25 and we'll give you £25 sort of thing, and I thought, I'll try this. So I deposited through my credit card £25 and I was

given £25 and then you start to...I actually found I was quite enjoying it' (George, 53).

These can tempt people that otherwise may not have started gambling. They will also send emails to regular customers to keep them gambling, and will even deposit money into a known problem gamblers account to tempt them to start gambling again:

'To give you an example...I ended up actually, not becoming a friend but the guy that...on the online casino that I used, used to email me. Well that's how you keep the customers sweet. I mean sometimes he would email me and say, I noticed you had a bad run last night, cards went against you, I've put some chips in your account. And I'd go and check my account and there would be £1,000 in it. You know, of which I would just gamble with in the next x amount of minutes. So you started to build up that type of relationship with the guy' (George, 53).

'If you have been going on to a site for, a good number of times, like with me it was STV (Scottish Television) bingo towards the end, and say you haven't gone on for a couple of weeks, they will send you an email and say we haven't seen you, we've put x amount of pounds into your account so that you can have another game' (Fran, 57).

5.3.6 Advertising

Since the Gambling Act 2005 came into force in Great Britain on 1st September 2007, gambling advertisements on television and radio have been allowed and may be contributing to increasing gambling behaviour, particularly online gambling.

'I suppose it's also to do with the TV adverts and things like that, like 888.com and 32Red...you've probably seen it all on the TV' (Barry, 41).

'The advertising...because it's only a new phenomenon this Texas Hold'Em, it hasn't been around that long...I'd never heard of the bloody game five years ago. Although I think obviously it's been in the states quite a long time, but over here, it really hasn't been around, it's relatively new' (Richard, 57).

'When you see like...the footballers in the adverts...I mean everyone is a gambler in things in life but, with advertising, before that they might do the Grand National once a year but now everyone is doing it, scratchcards, etc.' (Joseph, 28).

Gambling advertisements may encourage people to start gambling or try new gambling activities:

'I think it does on the internet because a lot of people I know, a lot of my mates at university started playing that online poker and...I know they must have only got into it because a lot of them I know like really intellectual and normal people...I can imagine that they only got into it by going on Facebook or going on Google or something like that, going on another website and seeing an advert in corner of screen and clicking on it' (Rick, 26).

And the adverts may be particularly dangerous for problem gamblers as they may be too encouraging:

'I look at sky sports and it's like, it's better when there's money on it and...to me, a person who's got a problem I just think that's...it's encouraging people with a problem' (Alex, 32).

One female offline gambler said that she had started to notice a lot of adverts for online bingo and would be quite tempted to try it because it looks quite fun:

'It was a woman dancing around on the ceiling, she walked up the walls and then on the ceiling and it looked like it was all in one take and looked real! It was well good! The music was quite jazzy too and she danced as well. I just thought it would be funny to play bingo because it's what old people do, wasn't so much about winning money as I don't actually know a lot about bingo' (Rose, 21).

The adverts also make it appear glamorous and easy to win money, and some adverts appear to be specifically aimed at certain people:

'You see adverts for online bingo, the housewife in the living room just seemingly not being able to lose, so I suppose that's potentially a bit dangerous' (Kristian, 26).

'I think all the advertising for bingo and stuff is aimed at people who are sat in their house all day, like you sit there and day time TV every other advert is some sort of gambling, some sort of bingo thing on the internet' (Amanda, 20).

A third of the participants (n=13) felt that there is too much advertising for gambling, whether this is for traditional gambling venues or internet gambling. The general opinion among all participants seems to be that there is just too much advertising:

'You can't watch a sporting event on sky now without saying 'it matters more when there's money on it' sky bet. You can't walk down the street and not see a billboard with some form of gambling... you can't do anything now without having gambling in your face' (Nathan, 34).

'They're absolutely...all the poker sites in particular are absolutely saturated, they saturate the media, you see them in almost every advert break on TV' (Leon, 25).

'There's a lot of it. There's a lot of bingo sites lately as well that you see advertised here there and everywhere' (Tim, 37).

'I think it's very nicely packaged I believe and of course it's advertised on mainstream television now... so it's obviously growing' (Hazel, 52).

There was a strong belief by participants that the advertising can encourage people to gamble and it can be dangerous for problem gamblers. A few participants felt that advertising for gambling should be banned. It is worth noting that all these participants were problem gamblers.

'They shouldn't be able to advertise gambling' (Nathan, 34).

'When I see adverts on the TV that advertise all the bingo and everything during the day...I really don't think they should be aloud to advertise' (George, 53).

'I think it emphasises the problem for me, like it's better when there's money on it but it's not actually do you know what I mean, so I think it's kind of immoral to lead people down that road to think that it is alright to do that...because then it can lead people to 'oh well I'll have a go at that'' (Alex, 32).

None of the non-gamblers or social gamblers felt that advertising should be banned. A few participants felt that it is acceptable to advertise gambling because it is a huge industry:

'It's a business, there's nothing wrong with advertising. It's an empire as much as alcohol and cigarettes and it's ok for that so it's ok to advertise gambling but it's up to the person whether they do it or not' (Max, 23).

'I understand it's a bit of an issue for some people and you need to create greater awareness of it...but kids are going to be aware of it one way or another...so I don't have an issue with the advertising of it...but I think ultimately it relies on the common sense of the gambler and if you ban it you're pretty much saying that the public doesn't have any common sense, which...there's a danger of verging into nanny state territory if you try and restrict it too much' (Kristian, 26).

'Betting will always be a growing trade, people will always want to do it, because there's always that promise of winning, so I haven't really got a problem with it' (Matthew, 27).

'There are people that want to gamble and a lot of people that get a lot of interest out of it so I don't see any reason why not' (Edith, 58).

One professional gambler commented that he wants the gambling advertising to be around because it does entice people to gamble, particularly problem gamblers but he doesn't have an issue with this because that is how he makes his money:

'I'm glad they advertise and I'm glad...there are people who lose money gambling' (Martin, 26).

However, participants thought that the dangers of advertising should be advertised more. There should be more control like there is with tobacco and alcohol advertising:

'With alcohol and drugs there's loads of warnings...there's loads of TV adverts on, this is what happens if you drink too much, this is what happens if you have drugs, there's nothing like that about gambling' (Rick, 26).

The role of commercial marketing in smoking (Lovato, Linn, Stead & Best, 2003), and indeed drinking (Anderson, de Bruin, Andus, Gordon & Hastings, 2009) and dietary problems (Hastings, McDermott, Andus, Stead & Thompson, 2006), has long been recognised, and policy makers have responded accordingly. There was a strong view among several participants that policy makers should respond to gambling in the same way, to protect vulnerable individuals from developing a gambling problem. For example, tobacco advertising is banned completely in the United Kingdom and a few participants felt that gambling has serious negative consequences and advertising should be banned. Furthermore, cigarette packets come with health warnings on them. Some participants felt that the dangers of gambling should be advertised in the same way.

5.3.7 Gambling has become normalised

The use of advertising appears to stimulate some people to gamble (Griffiths 2003a). The psychology of 'gambling advertising' is important in attracting potential punters. In almost all advertisements there is almost no reference to the words 'gamble' and 'gambling' (Griffiths 2007b). Instead, seductive advertising phrases such as "soon everyone would be a winner, you could be next" may entice some players to gamble

(Derevensky & Gupta 2007). Griffiths (2007b) has suggested that the underlying psychological agenda in avoiding the words 'gamble' and 'gambling' in advertising appears to be about 'normalising' gambling and making it an activity that is socially acceptable and socially condoned. But is this a good thing? One problem gambler talked about his experience and how his addiction led to him embezzling £267,000 from work. He thought that he would never be able to get a job again but found it surprisingly easy to find work:

'I'm not sure whether gambling in general is becoming accepted because I was an operations manager and after what I had done I thought I am never ever going to get another job...But I applied for a job as a transport manager with quite a big timber company and I made a full disclosure at the interview and they gave me the job...the [Managing Director] said oh you know, everybody deserves a second chance, and I don't know whether that was because there's becoming a general acceptance of a gambling...culture type thing' (George, 53).

Gambling will always be around because people will always want to do it but opportunities to gamble are increasing, and not just online gambling:

'I think you only have to look at, I mean look at the state of affairs at the moment, whereas obviously the economy and things like that, you've got bookmakers there, new shops being built so I think that says it all really. Betting will always be a growing trade, people will always want to do it' (Kristian, 27).

The important thing is to ensure that gambling is regulated and controlled to prevent or reduce problem gambling but maintain the enjoyment factor for the majority of people that are able to gamble responsibly.

5.3.7.1 Increase in gambling participation

The advertising and celebrity status afforded to gambling may lead to an increase in gambling participation, particularly in internet gambling:

'Gambling is bigger than pornography on the internet now? That's telling you something so...the turnover, the amount of money that's now spent pretty much every man and his dog' (Damian, 43).

There has also been a huge rise in online poker in recent years:

'I think certainly the rise in the last four or five years of internet gambling and this huge, what do you call it, there's a huge sway of people who are now playing hold'em in particular' (Richard, 57).

The *World Series of Poker* has become really popular and one participant talked about why he thinks there has been an increase in internet poker:

'It's massive now. If you look at like the World Series of Poker...They started off about 20 years ago, there was probably 200 or 250 people so it's like a couple hundred to three hundred dollars and now the big tournaments have 6000 people in it, and the first prize is \$5 million dollars. Have you heard of a guy called Chris MoneyMaker²? He won it and since then there's been a massive explosion in internet poker. Joe average thinks right, if MoneyMaker can do it, then I can. So yeah, it's everywhere now' (Joseph, 28).

Poker players appear to have been awarded a sort of celebrity status and have become 'heroes' for new players to look up to and aspire to be like:

'They're like sports stars now the top poker players. It's a glamorous lifestyle. I think that's what it is' (Tim, 37).

5.3.8 Internet gambling is more dangerous

The features that lead to the reduced authenticity of gambling online, and are reasons why many offline gamblers choose not to use the internet to gamble, may actually be features that lead to gambling becoming more problematic online. Some people had very strong negative opinions about internet gambling:

'I think it's the devil to be honest, it should be stopped' (Nathan, 34).

All but one participant strongly believed that internet gambling is more risky and more addictive than offline gambling:

'I think if anything it's probably more dangerous because...there's less effort involved...it's at your fingertips, you can do it easily...I mean gambling is easy anyway but it's at your fingertips so it's on the internet so I think personally it's a lot more dangerous so I'd probably stay away from it' (Matthew, 27).

It is interesting then that internet gamblers, offline gamblers, and non-gamblers all

² Chris MoneyMaker won the main event at the 2003 *World Series of Poker* after qualifying online. It was his first live tournament. His victory is generally credited for being one of the main catalysts for the poker boom in the years following his win which is known in the poker world as the 'MoneyMaker Effect'

thought that internet gambling is more addictive, yet some people still choose to use the internet to gamble:

'I think [internet gambling] could be more [addictive]. Purely just through the fact that it's a 24/7...there's no doubt I could wake up at 4.30am and gamble on something somewhere around the world...so yes, I think it is more of a problem and potentially more addictive, because it's kind of there talking to you isn't it, oh switch me on type thing...whereas you don't necessarily have that opportunity [offline]' (Damian, 43).

Negative opinions on internet gambling were held by nearly all of the non-gamblers, and a few of the offline gamblers. Many of the non-gamblers, offline gamblers, and internet gamblers held the view that internet gambling was more addictive than offline gambling, mainly because there is much more opportunity to gamble online than offline due to the 24/7 availability:

'I don't choose to use the internet because I think that would be the ultimate thing because you wouldn't have to leave home to do it...you could sit in front of your computer and do it. At least when I gamble I've got to actually bother to get up and go to a bookmakers and make that choice to walk through that door' (John, 34).

'It's 24 hours now isn't it...it's whenever you want, whereas the betting shops will close at 6[pm] in the winter, 9[pm] in the summer...whereas the online stuff now, it's just there all day, every minute of the day, 24 hours' (Barry, 41).

'If you were addicted to online roulette you could just gamble anywhere. You could gamble at work, on your phone...anything. I think electronic gambling is a lot more addictive than...face-to-face, going to a race track or something, definitely' (Rick, 26).

Online gambling can be more dangerous because it is always there, you can't escape from it, whereas with offline gambling you can detach yourself from it by simply leaving the gambling venue:

'I think so because it's something you've decided to do on your own... it becomes habit and generally a habit is an addiction I think. Whereas if you're going to a casino its more like...well you can detach yourself from the casino when you leave but if you're doing something on your own you're more consciously doing it.' (Max, 23)

And the fact that it can be accessed from the comfort of one's own home can make it potentially more addictive as a person does not have to consider travel issues:

'I think it's too easily accessible. It can ruin lives quite easily...I think because it's more easily accessible and in order to go to the casinos you have to go out, pre-empt it, get ready, plan to go there, whereas you can just wake up in the morning and log on and spend hours on there if you want, whereas going to the casino you have to prepare to go...gambling at home online can be more addictive' (Max, 23).

'It's easy access, it's just there, rather than you've got to travel out to a casino or you've got to go to the bookies or whatever. It's there. You can always access it' (Tim, 37).

The use of electronic money is another reason why people think internet gambling is more addictive:

'It's easier for people to bet money when all they've got to do is click a button...instead of having the money real in front of you, I think it's easier for people to just click there money away where they don't see it, all they see is a number on the screen... it's easier for them to gamble that way' (Martin, 26).

'The fact that money is not in fact handled makes it take on an almost monopoly like worth...I also think internet gamblers can be likened to adrenaline junkies' (Fran, 57).

'I think a lot more dangerous than going into a betting shop or a casino because obviously you can just put your credit card details in and then...you lose track of how much you are actually gambling away because you don't actually see the money you just spend it' (Amanda, 20).

Internet gambling is also a lot quicker which is why it could be potentially more addictive:

'I went on the online casino...that's frightening how fast you can lose that, I mean literally I lost a tenner in about 15 seconds because it's so fast so I left that alone. That is very dangerous I think...It put me off because it's in the comfort of your own home, it's connected straight away to your bank account. In the casino you've got to go and put your money in, this is like, straight wired into your account and that's it' (Matthew, 27).

Internet gambling also allows for the possibility to play multiple games:

'And multiple games...there not just on one tournament, they might have several games going at the same time. That's addiction I'm afraid, that's what I believe' (Richard, 57).

The fact that internet gambling is anonymous and there is very little social interaction could be another reason why internet gambling is more addictive:

'You can sit and...you've got no social interaction, you're not meeting anybody, you're not speaking to anybody, you're not crossing the threshold so I suppose if you're addicted to them [internet gambling websites] they're going to be quite damaging' (Len, 52).

'You're anonymous, it's not sociable so therefore I think you can be in your own little world and it can be hidden a bit more' (Mick, 46).

'It's anonymous isn't it. It's just a screen... maybe if you're going to the shop all the time you might be a bit funny or this guy knows you've lost £150 this week... online it's a faceless thing isn't' (Nick, 26).

'I think it could be more addictive because people don't know you're doing it...it's more anonymous as well, so...you could do it more in secret, than if you were doing it in the casinos, because people could see you' (Brenda, 26).

There was also a strong opinion that internet gambling 'hooks' people into gambling a lot quicker. It was claimed by participants that people may become addicted to gambling a lot quicker online:

'Internet gambling is, I think completely different to any other form of gambling, by that I mean, the speed in which it actually hooks you. I am firmly of the opinion that internet gambling "hooks" people much, much quicker than conventional gambling' (Fran, 57).

'Oh yes, yes. I very, very quickly became hooked on it and...it went from there...I just started gambling constantly...Within a few months I would be gambling six hours a day...it took me 15 months to go from a comfortable lifestyle to facing jail' (George, 53).

Participants also claimed that internet gambling could intensify the experience and lead to people gambling more. One of the problem gamblers talked about how the internet made his gambling behaviour worse:

'So it probably, it intensified I would say, it intensified my gambling...I think in my case [internet gambling] was more [addictive]...It intensified...the

experience of gambling...I was solely in charge of it...so I would say it intensified my experience...it intensified the high really, and the escapism, you know everything else that came along with it' (Alex, 32).

Some of the offline problem gamblers were thankful that they hadn't started internet gambling because they believed that it would make their addiction a lot worse.

However, what might be more important is the type of gambling activity. Event frequency (i.e., how fast a person can gamble, get the result and gamble again) is widely believed to be one of the most important structural characteristics influencing excessive play (Griffiths, 2003a). Games with a high event frequency are thought to be more likely to lead to problem gambling than games with low event frequency (Griffiths, 1999b). What is interesting is that many of the problem gamblers actually felt that virtual roulette was the most addictive activity for them. The virtual roulette machines have a very high event frequency, much higher than would occur by playing roulette in a casino. The virtual roulette games can be played at a significantly faster rate than would occur in offline venues:

'Virtual roulette, yes. I mean it's almost become the crack cocaine of gambling if you like...I've been in there at 8am and each betting shop is only allowed four of those fixed odds betting terminals and all four of them have been used and all four of them have been used by people doing the roulette because like I said, it's an instant big win, an instant big win, so certainly it's the roulette, that's the big one within the bookies' (Damian, 43).

'Yeah, the virtual roulette is a killer...I mean that's the way they're geared... you can gamble small amounts, you can go in there with £2 on the virtual roulette and come out with £1000 and you can't really do that on the horses but then you go in there with £500 and come out with nothing in the space of ten minutes as well' (Nathan, 34).

'I think the roulette, the virtual reality stuff, is the most addictive one' (Barry, 41).

'I can control the horses side of it, but sometimes lose the plot with these [virtual roulette machines] (Jeff, 42).

These virtual roulette machines are a type of electronic gaming machine (EGM) and Dowling, Smith and Thomas (2004) have reported on the general view that electronic gaming is the most 'addictive' form of gambling and the fact that news media reports have referred to EGMs as the 'crack-cocaine' of gambling. It is interesting then, that

one participant refers to virtual roulette as the crack-cocaine of gambling. In their review of EGMs, Dowling *et al.* (2004) found that, despite overwhelming acceptance that gaming machines are associated with the highest level of problem gambling, inconclusive evidence can be found in the empirical literature to support the analogy likening electronic gaming to ‘crack-cocaine’.

Other gamblers felt that internet poker was the most addictive type of gambling for them, but again the event frequency of poker online is much higher than playing poker in a traditional offline venue:

‘I think internet poker is about the most addictive thing you can do’ (Edd, 32).

One gambler, who participates in a wide range of gambling activities such as poker online and offline, horse race betting online and offline, roulette online and offline believes that internet poker is the most addictive activity:

‘Poker to me is probably the most addictive thing that I’ve got because when I go home, instead of going to bed knowing I’ve got to go to work the next morning, first thing I do when I get in is put my laptop on and log on to one of the poker sites’ (Clive, 47).

It would seem that rather than the internet *per se*, it is the gambling activity that is more important in terms of whether a person will become addicted. Games with a high event frequency appear to be more problematic and the internet is simply a medium in which to engage in the behaviour. However, the internet does offer greater opportunity to manipulate the event frequency of gambling activities and as a result the event frequency is thought to be higher online than offline (Griffiths & Barnes, 2008). This coupled with the fact there is greater opportunity to gamble online as it is so widely available and easily accessible could lead to internet gambling being more addictive for some people.

When probed, the non-gamblers did believe that internet gambling could be addictive:

‘I think when it’s brought into the home it can be kind of dangerous because it can feed the addiction’ (Mick, 46).

‘I don’t really know people’s reasons for gambling but I suppose now you can do it on the internet...there’s a lot of women at home all day long...it’s quite easy to get sucked in’ (Maria, 53).

However, they all had a lack of knowledge on the subject of gambling and internet gambling and did not seem as aware of the risks associated with it, compared to the online and offline gamblers:

'I don't know to be honest, I don't really know a lot about gambling because I've never looked into it, I've no idea what other sort of things are out there really' (Charlotte, 46).

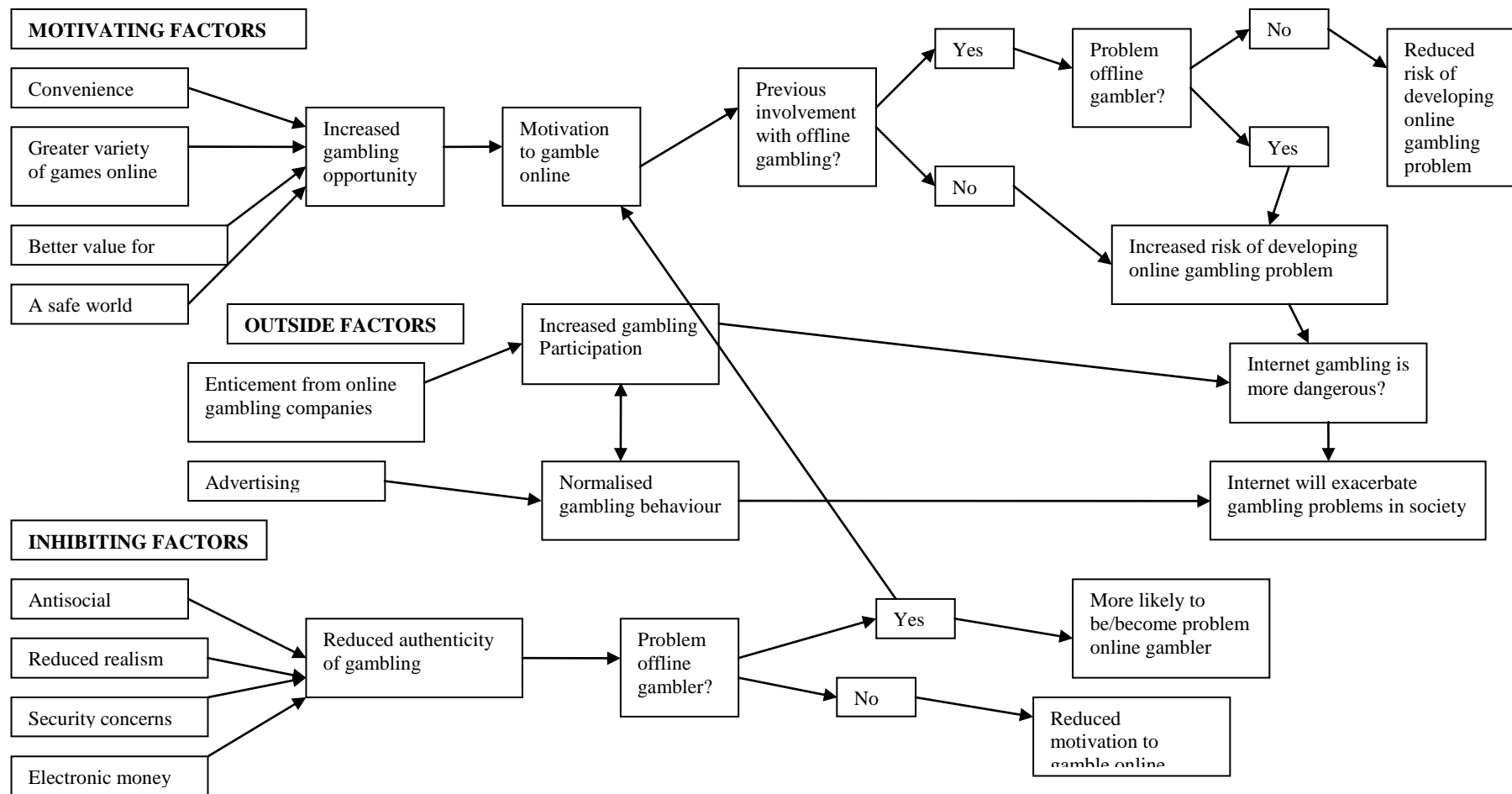
'I think poker and that is quite interesting on there, but I don't know really, because I don't know that much about the Internet so I'm a bit useless on that sorry' (Edith, 58).

It could be that internet gambling may be more problematic for individuals who have no experience with offline gambling. The fact that two of the problem online gamblers (out of six) had never gambled offline prior to starting online gambling, while all nine of the non-problem online gamblers did have prior experience with offline gambling suggests that this may be the case, although further research is urgently required.

5.4 Theoretical propositions

From the data, four theoretical propositions have emerged in relation to the motivating and inhibiting factors of engaging in online gambling behaviour and how this may impact on problem gambling behaviour [see Figure 4]. These now need to be tested empirically.

Figure 4 Motivating and inhibiting factors of engaging in online gambling among current gamblers



Theory 1: The medium of online gambling provides gamblers with better value for money, greater variety of games and overall convenience and thus increases gambling opportunity and motivation to gamble online.

Theory 2: The medium of online gambling can also lead to a reduced authenticity of gambling and thus inhibiting some individuals from gambling online (particularly those people who enjoy the social element of gambling – e.g. playing poker, being around other people).

Theory 3: No previous involvement with offline gambling prior to engaging in online gambling may increase an individual's risk of developing a gambling problem.

Theory 4: If an online gambler is currently a problem offline gambler then they have an increased risk of developing an online gambling problem

5.5 Discussion

There is a substantial lack of research available regarding precisely why people are choosing to gamble online, but also, just as importantly, why some gamblers choose not to gamble online. The objective of this study was to examine the motivating and inhibiting factors of engaging in online gambling behaviour. The diverse range of reasons (e.g., accessibility, availability, convenience, better value for money, greater variety of games, multiple gambling opportunities etc.) given for online gambling demonstrates the diversity of this group. Ultimately it would seem that the internet is providing more opportunity for gambling which is why people are engaging in internet gambling behaviour. However, the perception that internet gambling is more 'dangerous' can prevent non-gamblers and gamblers from engaging in the behaviour. The overriding theme was that the internet will exacerbate gambling problems in society. On the whole, it was found that offline and online problem gamblers share many similarities regarding the impact the problem behaviour has on well-being, such as gambling to manage negative emotional states and experiencing mental health, physical health, and emotional health problems. No differences were apparent between problem internet gamblers and problem offline gamblers in relation to the problem gambling behaviour impacting on quality of life and well-being. A few subtle differences were found, such as offline problem gamblers more likely to report opportunity gambling and were more likely to work in gambling environments than online problem gamblers (perhaps

because they are drawn to the atmosphere of offline gambling). Additionally online problem gamblers were more likely to report their problem behaviour impacts on their work; most likely because they have access to the internet for much of the day. Furthermore, there were very few differences between problem online gamblers and non-problem online gamblers in terms of motivations for gambling online. All reported gambling online for the convenience, availability, accessibility, the greater variety of games available online and the free offers available. The only difference was that problem online gamblers were more likely to report gambling online for the anonymity.

The motivating factors for engaging in online gambling lead to increased gambling opportunities for the player. One theoretical proposition derived from the Grounded Theory (which needs to be tested empirically), is that, if a player has previous involvement with offline gambling but is not a current problem offline gambler then they have reduced risk of developing an online gambling problem than someone who has no previous involvement with offline gambling. A player who does have previous involvement with offline gambling and is a current problem gambler is likely to be more affected by online gambling and have increased risk of developing an online gambling problem than a non-problem gambler.

Two online gamblers interviewed in this study had never gambled offline prior to starting online gambling and consequently developed a gambling problem. However, all of the other online gamblers had already participated in offline gambling and the other problem online gamblers had already developed a problem through gambling offline before they started gambling on the internet. Therefore, it could be that those new to gambling, who choose to gamble online may be less aware of the dangers/risks of using the internet for gambling, while current gamblers may have more of an idea of how addictive it can be. This can be supported by the fact that the non-gamblers had a lack of knowledge on gambling and internet gambling, and therefore may be less aware of the risks compared to current gamblers. Current problem gamblers may use the internet as a convenient medium to engage in their addictive behaviour. The fact that online gambling may be more addictive could effectively be due to the structural and situational characteristics of online gambling that increase the tendency to gamble in a disordered, problematic manner, although this will need to be tested empirically.

The inhibiting factors of engaging in online gambling lead to the belief that the authenticity of gambling is reduced online and therefore it wouldn't be as enjoyable. If a player is a problem offline gambler they might be more motivated to also gamble online because it provides greater anonymity and increased gambling opportunity, but again this will need to be tested empirically. The reduced authenticity of online gambling can reduce the motivation to gamble online among some players. It is hypothesised that those players who enjoy the social element of gambling, such as the atmosphere at casinos, or playing a social game of cards will be less likely to gamble online. Online gambling may be more appealing for solitary gambling activities such as placing sporting bets simply because of the convenient nature of it and the better odds available online. Online gambling is also likely to be a supplementary form of gambling for semi-professional and professional gamblers due to the ability to play multiple games and may also attract beginners due to the ability to practice for free or play for lower stakes online. It is possible that online gambling may be more dangerous for those who are current problem offline gamblers or those who have never experienced offline gambling. The increased gambling opportunity provided by the internet could ultimately exacerbate gambling problems in society as more people who have never engaged in offline gambling may be attracted to online gambling. However, these hypotheses are speculation at this stage and further research is required.

The antisocial nature of online gambling has been identified as one of the inhibiting factors of online gambling, but also identified as one of the motivating factors for problem gamblers. The antisocial element is likely to have different impacts for different activities and types of players. For social games such as poker, many recreational players will be put off from playing poker online because there is no social interaction, but they may still choose to gamble on the internet for other activities such as sports betting. However, some offline sports bettors have said they gamble with friends – they enjoy the social element of going to the betting shop with friends and placing bets then watching the game in the afternoon, they would not enjoy betting online on their own. Therefore, further research is required on the characteristics of internet gamblers to reach a more definitive understanding for the causes and reasons for internet gambling, and how this compares to individuals who engage in offline gambling. It is possible that internet gambling sites offer players a range of distinct features that are unavailable in land-based venues and internet gambling may be used by a different population than land-based gambling. Further research will help clarify

whether internet and land-based gambling sites are in direct competition with one another, or whether each opportunity serves a distinct market.

Furthermore, it would seem that problem gamblers, whether online or offline gamblers do experience a wide range of problems that non-problem gamblers do not experience. It would seem that for a problem gambler, the effects the problem behaviour has on quality of life and well-being are no different whether the gambler participates in online or offline gambling, however there does not seem to be a difference between problem gamblers online or offline, in terms of the amount of time spent gambling or consequences of problem gambling. The online survey may shed more light on whether there are any differences between different types of online gamblers, i.e., whether problem online slot machine players are different to problem online poker players.

The idea of escape as a motivation to gamble is well documented in the psychological literature. Several researchers stress that problem gambling develops out of the need to obtain relief from a stressed state, such as guilt, rejection, and/or depression (Blaszczynski, McConaghy, & Frankova, 1990; Carroll & Huxley, 1994; Griffiths, 1993; Jacobs, 1988). Gambling to escape may be an attempt to regulate these negative affective states (Wood & Griffiths, 2007). Building on the work of Jacobs (1988), Rosenthal and Rugle (1994) argued that the intense focus and concentration of gambling may serve to push unpleasant aspects of life out of awareness, allowing the individual to 'dissociate' from the stress.

The findings from this large scale qualitative study have also opened up additional avenues for further research to explore. Surprisingly, two of the self-defined non gamblers played the lottery every week. One player had been using the same numbers every week for the past 14 years, the other player had a lucky dip every week, however, both players considered themselves non-gamblers and they did not believe that playing the lottery was gambling. Future research could consider exploring why some people perceive that the lottery is not gambling. It could also be worth examining in further detail the 'unconscious desire to lose' phenomenon (Bergler, 1957) such as why problem gamblers behave like this, and is it a common trait? Another issue to explore is 'employment in gambling venues'. In this study three of the participants had worked in gambling venues. Two of these were problem gamblers and they reported that this may have contributed towards the development of their gambling problem. Future research

could investigate whether employment in gambling venues can contribute towards greater involvement in gambling and/or increased risk of gambling related problems; and whether gamblers work in gambling venues because they are interested in gambling or do people who work in gambling venues then become interested in gambling? A further topic to explore is how some gamblers are able to make a living from gambling. What strategies and skills do they have? How are they different from recreational gamblers and how do their perceptions of skill differ?

5.5.1 Limitations

It is worth mentioning some of the limitations of the study, largely the fact that the results are not generalisable as this was an exploratory study. The sample was relatively small as only 15 online gamblers, 14 offline gamblers and 11 non-gamblers were interviewed, however in terms of a Grounded theory study this is a considerable sample size. The majority of the gamblers were male so no distinctions between gender could be examined. Whether the results can be applied to a female population will have to be explored in future research. Additionally the participants were only interviewed once so this prevented the opportunity for theoretical exploration with the same participants or to follow up questions. It is also worth pointing out that the reliability of the interpretation of transcripts may be weakened by failure to record apparently trivial, but often crucial, pauses and overlaps (Silverman, 2000). However, greater care was taken to ensure that all interviews were transcribed in the same way. By their very nature, qualitative approaches such as Grounded theory, inevitably involve elements of subjectivity. Thus while subject to an initial verification through theoretical sampling, the theory generated will require further testing.

5.5.2 Conclusions

The theoretical proposition developed suggesting that no previous involvement with offline gambling prior to engaging in online gambling may increase an individual's risk of developing a gambling problem has never been reported in the literature before. This could potentially have huge implications in terms of prevention and treatment of gambling problems. Prior experience with offline gambling could provide people with an awareness of the risks of gambling and act as a protective barrier to the dangers of online gambling addiction. It is clear then that education and awareness of the risks of gambling and online gambling is needed to provide people with responsible gambling information and reduce the risk of developing an online gambling problem.

Chapter 6: Online survey on internet gambling behaviour

Relatively little is known about the characteristics of online gamblers and their playing behaviour, or whether there are differences between different types of gamblers (e.g. online poker players may be completely different to online sports betters), although some researchers are starting to look at this (LaBrie, Kaplan, LaPlante, Nelson & Shaffer, 2008; LaBrie, LaPlante, Nelson, Schumann & Shaffer, 2007; LaPlante *et al.*, 2008). By understanding how online gamblers differ from offline gamblers, or what factors might predict online problem gambling, successful treatment measures and interventions can be developed to potentially reduce the number of online problem gamblers. This chapter will examine the demographics of internet gamblers and playing behaviour, the impact structural and situational characteristics of online gambling have on gambling behaviour, and attitudes towards gambling.

6.1 Demographics of internet gamblers

6.1.1 Age

There is a paucity of research examining internet gambling behaviour and attitudes and little is known about their characteristics (McBride & Derevensky, 2009; Welte *et al.*, 2002; Wood, Williams, & Lawton, 2007; Wood & Griffiths, 2008; Wood & Williams, 2007a; 2009; Woolley, 2003). McBride and Derevensky (2009) found participants aged 25-54 years comprised the majority of those who reported gambling online, but those aged 18-24 years old were four times more likely than those 55 years and over to have gambled on the internet. This reflects how persuasive the internet may have become across all age groups. Younger participants, accustomed to spending time on the computer for other aspects of their lives, may be choosing the internet to engage in gambling (McBride & Derevensky, 2009) whereas older participants (55+ years) may be more partial to land-based gambling.

6.1.2 Gender

Internet gamblers, like land-based gamblers, are significantly more likely to be male (Gambling Commission, 2010; Griffiths, Wardle, Orford, Sproston & Erens, 2009; Wood & Williams, 2009). However, there are indications of increases in females gambling online compared to land-based venues. Griffiths (2001) found that women reported a preference to gambling online over traditional venues as it was viewed as safer, less intimidating, anonymous, more fun and more tempting. However, different

types of online gambling are preferred by different people. Young and Stevens (2009) noted games of chance were more likely to be played by older people, females, people living in remote areas, single parents, or those separated or widowed. In contrast, games of skill/or competition were more likely to be played by those living in urban areas, males, those in full-time employment and single. Thus participation in games of skill and chance is socially patterned, where different groups in society relate to chance in different ways.

6.1.3 Disability

A prevalence study by Wood and Williams (2009) found that an absence of physical disability and/or mental health problems was significantly associated with internet gambling. However, some studies have found that those with a disability may be more likely to experience problem gambling (Morasco & Petry, 2006; Wood & Williams, 2007b), particularly older adults with a disability (Southwell, Boreham, Laffan, 2008). It could be that non-problem gamblers may be less likely to have a disability but problem gamblers may be more likely to have a disability.

Morasco and Petry, (2006) in an opportunity sample of 723 participants recruited from dental clinics providing low or no-cost services to individuals without dental insurance in Connecticut, found 26% of participants receiving disability services were problem gamblers, and this was significantly higher than those not receiving disability services. However, it is not clear what disability services these participants were receiving and Wood, Williams and Lawton (2007) have found contrasting results. Their online questionnaire study on internet gambling behaviour (n=1,920) found those identifying themselves as disabled were significantly less likely to prefer internet gambling to land-based gambling than non-disabled individuals. The data did not provide information about specific disabilities but in cases where people's disabilities are physical, it might be expected that they would prefer internet gambling due to potential barriers related to access and transportation to land-based venues. Wood, Williams, and Lawton (2007) hypothesised that if many of these individuals use land-based gambling as an opportunity for social interaction and networking, especially if other such opportunities are relatively limited, then this could account for the significant difference in disabled versus non-disabled participants' preferences. Therefore, the survey in this chapter attempts to assess the relationship between disability and problem gambling.

6.1.4 Childhood gambling

There is strong evidence to indicate that those who gamble in childhood and adolescence are more likely to become problem gamblers later in life (Griffiths, 1995; Gupta & Derevensky, 1997). One study found that problem gamblers in Sweden started gambling at a significantly younger age compared to non-problem gamblers in Sweden (Volberg, Abbott, Ronnberg & Munck, 2001). This is consistent with research from New Zealand and North America (Abbott & Volberg, 1996; Volberg, 1996). The survey in this chapter may shed light on whether there is any relationship between the age someone starts gambling online and problem gambling.

6.1.5 Other factors

One concern with internet gambling is the lack of protection for vulnerable players, such as those under the influence of alcohol or drugs. Problem gamblers are significantly more likely to experience alcohol-related problems than non-gamblers and social gamblers (Griffiths, 2007a; Huang *et al.*, 2007; Welte, Barnes & Hoffman, 2004). Using data from the 2007 British Gambling Prevalence Survey, Griffiths *et al.* (2010) also found that alcohol consumption as measured by the number of units drunk on their heaviest drinking day in the past year was significantly associated with problem gambling. Furthermore, in a survey of gambling in a nationally representative sample of 20,739 student athletes, Huang *et al.* (2007) reported that problem gamblers are significantly more likely to experience more drug and/or alcohol related problems than non-gamblers and social gamblers. When a person gambles at home on the internet, there is no way for an online gambling operator to know whether that person is under the influence of alcohol (or other intoxicating substances) when gambling. Therefore if a person is intoxicated while gambling at home, this may lead to an increase in expenditure and/or irrational play. Additionally, smoking access may also be a factor in online gambling. Griffiths *et al.* (2010) also suggest that smoking bans may help decrease offline gambling given the co-relationship between the two behaviours. Corney and Davis (2010) did find that some female internet gamblers started gambling online as a result of the smoking ban and no longer being able to smoke in offline gambling venues. However further research is needed to assess whether the smoking ban will lead to an increase in online gambling as smokers can gamble from the comfort of their own home, while gambling online.

6.2 Structural and situational characteristics

6.2.1 Skill games versus games of chance

Young and Stevens (2009) carried out analysis using data from the 2005 Northern Territory Gambling Prevalence Survey (Young *et al.*, 2006) in which they conducted principal components analysis of participation in eight different gambling activities to explore the underlying structure of participation (n=9,627). They found that certain social variables (residential location, i.e. urban versus remote; age, gender, and position in the social structure) affect the degree of engagement with different gambling activities (i.e. games of chance or games of skill). However, several variables (place of birth; place of birth of parents; indigenous status, language spoken at home; level of education; individual income; household income; and number of people in the household), did not show any differences. In summary, games of chance were associated with residential remoteness, older people, females, and being either a single parent, separated or widowed. In contrast, games of skill are associated with urban location, males, full-time employment, lone-person households and single status. Therefore, gambling participation is considered somewhat socially patterned; different social groups are likely to gamble on specific gambling modes thus generating particular problem gambling outcomes (Young & Stevens, 2009). Whether the same can be said of internet gamblers remains to be seen.

Relationships also exist between different gambling activities and problem gambling (Wohl, Young & Hart, 2005; Oliveira & Silva, 2001). Young and Stevens (2009) also found no association between games of skill or games of chance and problem gambling, whereas individual activities were associated with problem gambling (electronic gaming machines; casino table games and private games), thus suggesting that it is the configuration of specific games, rather than the broad structure of activities that influence problem gambling risk. It may be that specific gambling activities play a more important role in predicting problem gambling than do socio-demographic factors (Young, Stevens & Morris, 2008). Therefore, Young and Stevens (2009) argue that a focus on gambling activities can help clarify the ways in which the general population gamble, and explain the prevalence of problem gambling. By focusing on particular gambling activities, tailored interventions and treatment measures can be developed to help treat problem gambling behaviour.

6.2.2 Multiple game playing

Internet gambling also provides players with a greater opportunity to play multiple games. Chapter 4 identified multiple gambling opportunities as potentially problematic online (although there is a distinct lack of research on the impact multi-gambling has, and players that engage in this form of gambling, thus further empirical research is required). Chapter 5 found that some individuals engage in multi-gambling, such as playing multiple poker tables in order to improve their hourly rate without needing to play high stakes. These players were more likely to be those making a living from playing poker. Griffiths, Parke, Wood and Rigbye (2009) also found similar findings in their online survey of online poker playing among University students.

There is lots of anecdotal evidence as to why players do engage in multi-gambling. Opportunities exist for players to play multiple games at the same time (e.g., playing multiple poker games online), providing additional betting opportunities and thus creating a higher perceived sense of winning through multiple winning opportunities. It could be hypothesised that additional betting opportunities in the form of playing multiple games at the same time may be more problematic for vulnerable individuals than games in which players can only play one game at a time, however, this has not been empirically tested. There is a wider lack of empirical research examining the impact of multi-gambling, and in particular the link between multi-gambling opportunities provided online and higher rates of problem gambling. This survey aims to identify whether there is a relationship between engaging in multi-gambling and problem gambling, and whether there are any specific characteristics unique to those players engaging in multi-gambling online.

6.2.3 Electronic payment

Another structural characteristic thought to have a greater impact online is the type of payment. It is thought that electronic gaming machines, which displays inserted money as wins and credits, can contribute to the rapid and continuous nature of electronic gaming by increasing the speed of play and allowing immediate reinforcement. Furthermore, by displaying credits, the true value of money is disguised and this may disrupt financial values, suspend judgment and produce unrealistic and infrequent assessment of financial losses (Griffiths, 1999a). As mentioned in Chapter 1, people may gamble more using e-cash than they would with real cash (Griffiths, 1999a). In a study looking at whether participants (n=40) gambled more with chips than with real

money when playing *Texas Hold'em* poker, Lapuz and Griffiths (2010) found that participants gambled significantly more with chips than with real money. In Chapter 5 many participants talked about spending more money when gambling online compared to gambling offline. It is thought that using electronic money online may have an even bigger impact due to the ease of which money can be bet at the 'click of a mouse', as identified in Chapter 4. However, further empirical research is required to examine whether people do actually spend more online, if so, how much more, how frequently, and on what activities is this most likely to happen. This survey aims to identify whether there is a relationship between gambling with more money online compared to offline and problem gambling behaviour.

6.2.4 'Fast' games

A study of 180 treatment seeking problem gamblers in the US, using three sources of data (a self-reported history of gambling involvement; DSM-IV criteria for problem gambling and onset; and latency of problem gambling onset was computed based on the problem form of gambling at PG onset rather than the current problem form) found that involvement with computerised gambling such as video slots and video poker is associated with a significantly faster onset of problem gambling compared to other more 'traditional' forms of gambling (Breen, 2004). Additionally, forms of gambling that are more rapid, continuous, and repetitive are associated with a significantly faster onset of problem gambling (Breen, 2004). Therefore, the medium of internet gambling, which has a typically higher event frequency than offline gambling as identified in Chapter 4, may also be associated with a faster onset of problem gambling than offline gambling. The aim of this study was to find out if there is a difference between people choosing to gamble online for the high speed of play and those that do not, and whether there is a relationship with problem gambling.

6.2.5 Near misses

It has been well documented that near misses may have an effect on the development and maintenance of gambling behaviour (Griffiths, 1991; 1993; 1994; 1999b; Harrigan, 2007; 2008; 2009 Kassinove & Schare, 2001; Parke & Griffiths, 2004a; 2007; Reid, 1986). Near misses may produce some of the excitement of a win through secondary reinforcement. Players are not constantly losing but constantly nearly winning (Parke & Griffiths, 2007). However, there is no empirical evidence that near misses have more or less of an effect online as opposed to offline. The survey did include a question on how

likely a player would be to gamble again after experiencing a near miss. It may be that near misses impact on engagement, spending, or other areas of problem gambling.

6.2.6 Chasing

Chasing has been identified as one of the central characteristics of the behaviour of problem gamblers (APA, 1994) and has also been found to be a risk factor in the development of gambling problems among adolescents (Griffiths, 1995). Losing at gambling can lead to 'chasing' where the player will continue gambling to recoup any losses (Griffiths, 2003b). It consists of more frequent involvement, increased persistence and elevated monetary risk in an effort to win back money that has been lost. This survey aimed to identify the relationship between chasing behaviour and problem gambling.

6.3 Attitudes towards gambling

Attitudes towards gambling have been examined in the past using occasional general attitude statements interspersed among other statements. For example, a random sample generated 8,479 Australian residents in Victoria who completed a survey on gambling behaviour and attitudes. Overall, Victorians hold negative views towards gambling, in particular electronic gambling machine gambling. The majority (85.1%) consider gambling a serious social problem, and both non-gamblers (87.3%) and gamblers (74.2%) agree that gambling is too widely accessible in Victoria and does more harm than good for the Victorian community (Centre for Gambling Research, 2004). Furthermore, in Kassinove, Tsytarev and Davidson, (1998) study, 171 Russian students and graduates completed the Gambling Attitude Scales (GAS), a liberal versus conservative ideology measure, a risk taking measure, and a measure of social desirability. They found that previous involvement with gambling was associated with more positive attitudes towards gambling in general, horse-race gambling, lottery gambling and casino gambling. Liberalism was associated with more positive attitudes toward gambling. Scores on the risk-taking scale were also positively related to scores on the GAS, therefore tendency to see oneself as a risk-taker may lead to positive attitudes towards gambling.

In a study of 1195 adolescent lottery and scratchcard players (Wood & Griffiths, 2004) found that 48% played the lottery and 30% played scratchcards either by themselves or with family and/or friends. There was a significant association between expressing the

lottery is a good idea and reported lottery play, and expressing scratchcards are a good idea and reported scratchcard playing. Furthermore, by applying the theory of planned behaviour, the results demonstrate how personal beliefs, subjective norms and perceived behavioural control contribute to the behavioural intention to play these activities.

Only one study seems to have specifically examined public attitudes towards gambling in the UK. Orford, Griffiths, Wardle, Sproston and Erens (2009), using data from the British Gambling Prevalence Survey (n=8880), found that public attitudes towards gambling are, overall, more negative than positive. While the majority felt that people have a right to gamble whenever they want and were against a total prohibition on gambling, most believed that gambling was more harmful than beneficial for individuals and society. More positive attitudes were reported among those with greater engagement in gambling. Whether internet gamblers have different attitudes to the general population has yet to be explored. The aim of this survey was to examine the attitudes to gambling and whether different types of internet gamblers have different attitudes.

6.4 What do we know about remote gambling?

6.4.1 Mobile phone gambling and interactive television gambling

There is very little research on mobile phone gambling. Researchers have speculated that mobile phone gambling will be popular like internet gambling because of the anonymity it provides and the convenience for gambling on the move (Griffiths, 2007d; Mahatanakoon, Wen & Lim, 2005). Gamblers are able to place bets on their mobile phone wherever they are without having to worry about finding a betting shop or finding access to a computer. However, it could also make 'impulse' betting easier and there is the potential for an increase in problem gambling, as is the case with internet gambling as it increases in popularity (Griffiths, 2006c).

It has been speculated in recent years, that mobile phone gambling would increase in popularity as mobile phone technology became more sophisticated (Griffiths, 2003b; Monaghan, 2008). With fourth generation (4G) mobile phones, it was predicted that customers will be able to play 'casino style' games like blackjack, poker and slots. It was predicted that the graphics, sound and displays on mobile and PDA devices would improve with the advent of 3G and 4G mobile devices and mobile phone gambling would become more popular (Griffiths, 2003b). But, this does not really seem to have

been the case at least until the present day. However, there are now many gambling applications for mobile phones, making it much easier for people to gamble on the move. As such mobile phones become cheaper and more popular, it is likely that mobile phone gambling will become more popular.

It has been speculated that interactive television gambling will also become more popular because people will trust their television sets more even though it is accessing the internet in the same way as a computer (Griffiths *et al.*, 2006). *Sky's* interactive betting reported increases in profit from the year 2002 to 2003 (Mercier & Barwise, 2004), however, it seems that this growth has not been maintained. However, *SkyBet* said that revenue had decreased by 6% on the prior year in 2008 (Betting Market, 2010). The company said that this reflected the continued shift from interactive TV betting towards the internet (Betting Market, 2010). None of the participants in Chapter 5 reported gambling via a mobile phone and only one participant reported having gambled via interactive television (although not at all frequently). This survey will provide further empirical evidence examining the rate of mobile phone and interactive TV gambling and the demographics of such gamblers, although it is hypothesised that participation in these forms will be relatively low.

6.4.2 Why do people gamble online?

Using data from an internet-based survey of 1,920 internet gamblers, Wood, Williams and Lawton, (2007) found that the primary reasons people gave for preferring internet gambling were: the relative convenience, comfort and ease of internet gambling; an aversion to the atmosphere and clientele of land-based venues; a preference for the pace and nature of online game-play; and the potential for higher wins and lower overall expenditures when gambling online. However, Wood, Williams and Lawton, (2007) collected their data in 2003. The popularity and prevalence of internet gambling has increased dramatically since 2003, thus the present study may indicate changes in terms of the demographics of internet gamblers, playing behaviour, and motivations and attitudes towards internet gambling.

Researchers know little about the ways different types of gambling may influence the development of addiction. Internet gambling can take many different forms (e.g. casino type games, lottery, sports betting and poker) but as LaPlante *et al.* (2009) comment, we do not know whether different forms pose differential risk to health. Initial research

indicates that participation in internet gambling is increasing (Woolley, 2003), and early research suggests that the majority of internet gamblers are active in more than one type of gambling activity (Griffiths, Wardle, Orford, Sproston & Erens, 2009; Woodruff & Gregory, 2005). However, there is much more to explore and game-play patterns such as frequency, duration and preferred type of play, remain under-researched (Wood & Williams, 2007a).

6.4.3 Aims

While internet gambling is becoming much more socially acceptable and readily available, and expanding at a rapid rate, there is insufficient knowledge of online gambling, including the characteristics of gamblers, the dynamics of internet gambling behaviour and the potential link between internet gambling and problem gambling (Wood & Williams, 2009). The aim of this exploratory study was to examine the demographics of internet gamblers, their online gambling behaviour, how structural and situational characteristics impact on online gambling behaviour, players; attitudes and opinions towards features of online gambling, motivations for gambling online and to examine the relationship between internet gamblers and problem gambling and to identify specific subsets of gamblers. For example, compared with online sports betters, online poker players may be completely different in terms of demographics, motivations to gamble, the experience of gambling and attitudes and opinions towards online gambling. The survey also asked about the types of treatment that problem gamblers had sought, drinking alcohol, smoking and using other remote forms of gambling. The results may indicate a relationship between a particular gambling activity and problem gambling. It was considered that the majority of online gamblers would be young males, but that a higher percentage of female gamblers would be found than has been the case in previous research. Based on findings in Chapters 4 and 5 it was considered that problem online gamblers would be more likely to engage in multi-gambling, use autoplay features and play for longer periods of time than non-problem online gamblers; but there would be few differences in terms of motivations for gambling online among problem online gamblers and non-problem gamblers. However, due to findings in Chapter 5 it was considered that problem online gamblers may be more motivated to gamble online for the anonymity compared to the non-problem online gamblers.

6.5 Methodology

6.5.1 Participants

A total of 1,119 participants took part in the online survey. A total of 144 were deleted from the analysis for a variety of reasons. First, 129 had only answered the demographic questions and did not answer any of the questions on gambling. Second, 13 participants were removed because they indicated that they did not gamble online and they had only answered the question about what offline gambling activity they engaged in and no other questions. Third, data from a further two participants was felt to be fabricated as they had answered yes to every question and indicated 'most days' for every gambling activity. Excluding participants in this way replicated strategies from similar previous studies such as LaBrie, LaPlante, Nelson, Schumann and Shaffer, (2007). This resulted in a total effective sample size of 975 participants that completed the survey in an appropriate manner for analysis.

6.5.2 Development of the survey

The survey contained a total of 71 questions (see Appendix 4). Questions to be tested empirically were derived from findings from the scoping study (Chapter 4) and the qualitative interview study (Chapter 5). Chapter 4 identified eight characteristics that were deemed to have significantly more impact online than offline. These were event frequency, event duration, free practice games, multi-game opportunity, continuity of play, autoplay features, bonus features such as free offers, and type of payment. It was therefore deemed important to examine how significant these features are for online gamblers. Additionally Chapter 4 also identified a number of characteristics requiring further research to determine the impact they are likely to have online. These characteristics (i.e., sound effects; multi-player competition; communication opportunities; regular time warnings; stake size; and perceived skill) were thought to potentially be more addictive online than offline and were tested empirically in the online survey. Furthermore, Chapter 5 clearly indicated the content of qualitative interviews to consistently reflect these characteristics that were deemed to be important in terms of motivations for using the internet to gamble and reasons for choosing particular gambling websites. Features that were mentioned included multi-gambling opportunities, practice games, bonus features and free offers, using electronic money, and the high speed of play. Additionally, Chapter 5 found that problem online gamblers were more likely to gamble online for the anonymity than the non-problem online gamblers.

6.5.2.1 Attitudes towards gambling

The themes to be tested empirically in the online survey had been identified so the process began by drafting a survey. Initially 113 questions were developed. The survey included a section on opinions and attitudes towards gambling. Many of the attitude statements were taken from the British Gambling Prevalence Survey carried out in 2007 (Wardle *et al.*, 2007) that included a 14-item scale of general attitudes towards gambling (the Attitudes Towards Gambling Scale: ATGS). This was the first empirical study of the general adult public's attitudes towards gambling in general (Orford *et al.*, 2009) and is suitable for use in future surveys. However, after some consideration, these items were dropped because they had a negative connotation towards online gambling, and the survey would be placed on gambling forums on the internet. It was thought that some moderators of the gambling forums might deem the survey inappropriate if it was thought to view gambling in a negative light and consequently they might remove it. The final survey contained only three attitude statements. Many of the statements included reflected opinions towards features of online gambling such as sound effects, graphics, trust, responsible gambling features, etc.

6.5.2.2 Monetary spending on gambling

The initial draft also contained several questions about monetary spending on online gambling, such as average amount spent gambling per session; total amount wagered in one session; total amount won in one session; and total amount lost in one session. However, it has been documented in previous survey designs that questions on gambling expenditure are not straightforward (Blaszczynski, Dumlao & Lange, 1997; Sproston *et al.*, 2000; Wardle *et al.*, 2007). A lack of clarity on survey items and ambiguity in terms of the meaning of questions can reduce the validity of survey designs.

Blaszczynski, Dumlao and Lange (1997) found a large variation in the interpretation of the question 'how much do you spend gambling'. Participants were shown five case vignettes describing various scenarios of wins and losses during a gambling session. Less than two thirds of participants calculated the figure to be the difference between the initial amount staked and the remaining money at the end of the session. There are at least four different interpretations that 'spend' could relate to (Sproston *et al.*, 2000):

- Amount ‘staked’ that is, the amount bet on an *individual event* (eg a horse race, a lottery ticket).
- ‘Outlay’, that is, the *sum* of multiple bets risked during a gambling session/episode.
- ‘Turnover’, that is, the total amount gambled, *including* any re-invested winnings.
- ‘Net expenditure’, that is, the amount gambled *minus* any winnings.

Questions on gambling expenditure can clearly be interpreted in different ways, and interpretation can vary for different gambling activities, even by the same respondent (Sproston *et al.*, 2000). As the validity of a survey’s findings is dependent upon the clarity and lack of ambiguity contained in each individual item (Blaszczynski, Dumlao & Lange, 1997), the questions on gambling expenditure were excluded. Only one question concerning the total amount won or lost in the past 7 days was included, with participants indicating how much this was. As participants were located all over the world, the currency was not consistent. Some items were also excluded if they were thought to be specific to particular forms of gambling, particular age groups, or particular policy issues.

6.5.3 Measures

6.5.3.1 Demographic information questions

Questions were asked concerning age, recoded into a dichotomous variable with those 34 years old or younger in one category and those older than 35 years old in another category. Participants were asked about their sex, and ethnicity was also recorded as either White British, Irish or other; Mixed White and Black Caribbean, White and Black African, White and Asian or other; Asian Indian, Pakistani, Bangladeshi or other; Black Caribbean, African or other, Chinese, or other ethnic background. Participants were asked about their country of residence (UK, USA, Canada, Australia, other), marital status (single, married/common law, separated/divorced, or widowed). Employment status and education status were also noted for participants as working full time, working part time, unemployed, retired, student, not working due to sickness, looking after home, or volunteering for the former and categories of left school at 16 years, left school at 18 years, undergraduate degree, postgraduate degree, or doctorate degree for the latter.

6.5.3.2 Online gambling behaviour

Respondents indicated how long they had been gambling for (online or offline) and how long they had been gambling for online. Questions concerning the frequency of which they participated in each gambling activity online (e.g., poker, roulette, bingo, etc) for money, and the frequency of which they participated in each gambling activity offline, were adopted from a previous study (McBride & Derevensky, 2009). They assessed how frequently a participant engaged in each activity, with a choice of four options ranging from 'never' to 'once a week or more'. This was what the present survey aimed to achieve, so that further analysis could be carried out on those that participate in an activity frequently, compared to those that do not participate in the activity frequently. The gambling activities included were: poker, roulette, blackjack, horse race betting, dog race betting, sports betting, spread betting, betting exchanges, bingo, fruit machines, football pools, lottery, instant win games, other. Respondents indicated how often they engaged in each activity. There were four response options ranging from 'never' to 'most days'. Respondents also indicated how old they were the first time they gambled on the internet, where they participate in internet gambling, what time of day, how long for, and whether they gamble online with anyone else.

6.5.3.3 Motivations for gambling online

Questions were also asked as to why participants gambled online. In the Wood, Williams and Lawton, (2007) survey, a response rate of 38% was obtained for the question asking why participants prefer online gambling and participants gave their answer in a text-field box. The present survey included fixed choices as this may reduce the perceived amount of effort involved in providing a rationale for their preference. Participants could choose as many that applied from: for convenience; for anonymity/privacy; the 24-hour availability; easy accessibility; for comfort/don't have to leave the house; offline venues are too far away; I do not like the atmosphere in land-based venues; I like the high speed of game play; I can play at my own pace; better value online; it is safer than going to an offline venue; influenced by gambling advertisements; I can bet 'in play'; the greater variety of games online; the greater flexibility in stake size; I spend less money online; because I can play multiple games; because I can practice for free; because of the bonus offers / free bets; to win money; out of boredom; because it is enjoyable; because of the person-to-person competition; it allows feelings of escapism; I am influenced by others; for the stimulation; and for the challenge.

6.5.3.4 Experience of gambling online

Respondents were also asked about what emotions they feel when gambling online. They could tick as many options that applied from a fixed choice list including: euphoria; relaxation; excitement; anger; escapism; lonely; frustrated; irritable; ashamed/embarrassed; empty; guilty; and happy. Respondents were asked about the potential disadvantages of internet gambling, and could choose from: there are no drawbacks; need a credit card; worried about fraud; do not trust the websites; the bets might be rigged; do not want to give out personal information; can not see your opponent; lack of atmosphere; does not seem as real as gambling offline; have to wait a long time to collect winnings; and easier to hide a gambling problem. Respondents were also asked about what brings a gambling session to an end, and again they could choose from a fixed choice list: had enough/bored; tired; run out of money; lost too much; won a lot; reaching a target; frustration; and something else to do.

6.5.3.5 Features of online gambling

Respondents were asked whether they play multiple games online, practice games, use the autoplay features, or communicate online with other players. This was on a 5-item Likert scale ranging from always, very often, sometimes, rarely and never. They were also asked whether they have ever swapped gender online, in which they answered 'yes' or 'no'. They were asked to indicate their reasons for choosing a gambling website and could choose from the following choices: some of my friends use it; brand name; free offers/bonuses; celebrity endorsements; advertisements; recommendations from other players; ease of use; graphics; and variety of games to play. They were also asked how they came across their first gambling website and could choose from the following choices: I clicked on a 'pop-up' message while I was on an internet site unrelated to gambling; while I was surfing on the internet I decided to search for a gambling site; a friend recommended it; online advertisement; offline advertisement; and promotion/free gambling CD.

Additionally, 18 statements were included examining attitudes and opinions towards features of online gambling. These features were structural and situational characteristics that had been identified in Chapters 4 and 5 as potentially more problematic online, and included: responsible gambling information; losses and time warnings; graphics; sound effects; 'fast' activities; easy games; jackpot size; person-to-person competition; skill; near misses' electronic money. Attitude statements included

the safety of internet gambling, the trustworthiness of gambling websites, whether internet gambling is more addictive than offline gambling, gambling advertisements and whether it is easy for children to gamble online. A questionnaire of Likert attitude scale format was used. Each expressed an attitude towards gambling, with five response options: 'strongly agree'; 'agree'; 'neither agree nor disagree'; 'disagree'; 'strongly disagree'.

6.5.3.6 Problem gambling screen

Respondents completed a problem gambling diagnostic measure (Problem Gambling Severity Index; Ferris & Wynne, 2001). The four response options were: never; sometimes; most of the time; almost always. The PGSI is a subset of the larger Canadian Problem Gambling Index (CPGI; see Ferris & Wynne, 2001). PGSI items include chasing losses, escalating gambling to maintain excitement, borrowing or selling to obtain money to gamble, betting more than one can afford, feeling guilty, being criticised by others, harm to health, financial difficulties to one's household and feeling that one might have a problem with gambling. Three of the items are new (gambling more than one can afford to lose, harm to health and financial difficulties to one's household) and the remaining items are all drawn from the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987) or the DSM-IV (APA, 1994) criteria for problem gambling. The PGSI is an evolution of older measures rather than something entirely new (Ferris & Wynne, 2001).

Several research studies have used the PGSI (e.g., Wardle *et al.*, 2007) and an initial report indicated that it has good psychometric properties, examining gambling involvement, problem gambling behaviour, adverse consequences, and problem gambling correlates (Ferris & Wynne, 2001). It classifies those problem gamblers who are most severely disordered but also has greater classification accuracy than other measures for successfully identifying individuals who are at low or moderate risk for developing a gambling problem (Wynne, 2003). There are four classification categories based on the following cut off points for PGSI scores: 0 = non-problem gambler, or non-gambler; 1-2 = low risk gambler; 3-7 = moderate risk gambler; 8+ = problem gambler.

6.5.3.7 Additional questions

Other questions included whether participants smoke or drink alcohol, ranging from never to daily, and whether they drink alcohol while gambling on the internet, ranging from never to always. Participants also indicated whether they had a long-standing illness, disability or infirmity by ticking yes or no. They were also asked whether they know anyone with a gambling problem, and could choose from the following choices: I do not know anyone; friend; partner; parent; other relative; my child/children; work colleague, and other. Participants were also asked whether they had ever sought help for a gambling problem for themselves, and could choose from the following choices: have not spoken to anyone; family or friend; GP/nurse; social worker; probation officer; faith or religious leader; *GamCare* (a charitable organisation offering services for problem gamblers); Gamblers Anonymous; residential treatment; online help service; another addiction service; credit/debt advisor; employer; and someone else.

6.5.4 Procedure

The aim was to post the survey on a large number of gambling forums and gambling websites. To post on the forums the websites require registration. Initially the researcher tried to register to 88 different gambling forums but the account was only activated in 57 of these accounts. Many of the gambling forums do not allow you to post an URL on the forums. Some allow you to after you have made 15 posts or more. However, as a new member it was not possible to make this many posts before posting the link to the survey. Where possible the moderator of the gambling website was contacted to ask for permission to post a link to the survey. The majority of the moderators did not respond. In the instances where the moderator had not responded and it was possible to post an URL on the forums, a post was made on the message boards explaining a little about the survey and asking for participants to complete the survey by clicking on the link which would then direct them to the survey (found at survey monkey). However a number of websites had to approve the messages before posting them, and consequently many of them were not approved, and some moderators banned the account as they believed the post to be spam. After being banned from some websites, and some accounts being disabled, a post was made on 30 gambling forums.

The forums ranged from specific gambling activities e.g., *PartyPoker*, or *playingbingo*, to more general gambling e.g., *casinomeister*, or *hpgambling* (see Appendix 5 for full list of websites). These forums were accessed regularly throughout the period of data

collection to reply to comments people had made regarding the post, and to refresh the posts so they appeared near the top to generate more interest. Additionally, two websites agreed to publicise the survey on their website, and posted a short article explaining the purpose of the study. This resulted in a total of 32 websites where the survey could be accessed. The survey was 'live' from January 2010 to May 2010. Some forums appeared to generate more interest than others based on the number of comments made after the initial post.

Once the participant clicked on the link they were directed to the survey found at surveymonkey.com. The information page explained the purpose of the study and what was involved by taking part, and indicated roughly how long it would take to complete. By continuing with the survey the participants indicated they were giving their consent to take part in the study. Participants were assured of complete anonymity and that no personally identifying information would be collected about themselves. Contact information for the primary researchers, in the event that participants had further questions about the study, was also provided.

6.5.5 Analysis

Analysis was conducted in three phases. First of all, descriptive statistics were carried out. Second, Chi-square tests of association were conducted to examine which variables had an effect on other variables. Third, a binary logistic regression was performed to examine which factors predict problem gambling status, based on those factors that were found to be significant in the Chi-square tests.

6.6 Results

6.6.1 Demographics

Of the total participants, 79.8 % were male, 17.9% were female, and 2.3% did not indicate their sex. The ages ranged from 17 to 80 years, however, the majority of the participants were aged between 18-24 (29.5%) or 25-34 (24.9%). The mean age was 34.7 years old (S.D 13.95 years, range 17- 80 years). The mean age of the males was 36.1 years (S.D 13.85), and the mean age of the females was 28.5 years (S.D 12.46), indicating that females were more likely to be younger.

Of the participants 43% indicated they were White British; 5.6 % White Irish and 35.3% White Other. Half of the participants were from the UK (50%) and 32.1% were from the

USA; 4.2% from Canada and 1.6% from Australia. A few participants (8.9%) indicated 'other'. Almost half were single (47.4%); and 43.4% were married/living as a couple; 5.8% were separated/divorced and 0.5% were widowed. Almost half (48%) indicated that they worked full time and 24.7% were students.

Table 6: Demographic characteristics of online gamblers

Category	Percentage of sample (n=975)	Percentage of problem gamblers ³ (n=353)
Sex		
Male	81.6	84.4
Female	18.4	15.6
Age		
18-24	29.5	27.8
25-34	24.9	21.3
35-44	18.3	26.4
45-54	13.9	14.8
55-64	7.5	6.0
65+	5.9	3.7
Nationality		
UK	51.6	49.7
USA	33.1	33.9
Canada	4.3	5.6
Other	9.2	9.4
Marital status		
Single	48.8	49.0
Married/Common law	44.6	43.2
Separated/divorced	6.0	7.5
Widowed	0.5	0.3
Education		
Left school at 16	11.4	12.8
Left school at 18	18.9	19.5
Undergraduate degree	50.9	51.0
Postgraduate degree	15.4	13.7
Doctorate degree	3.3	2.9
Employment		
Work full time	49.3	50.1
Work part time	8.7	7.2
Unemployed	7.6	9.0
Retired	6.2	3.8
Student	25.3	25.2
Not working due to sickness	1.7	2.3
Looking after home	0.8	1.7
Volunteer work	0.3	0.6
Number of years gambling		
Less than 1 year	12.6	9.3
1 year – 1year 364 days	10.8	9.3
2 years – 4 years 364 days	19.4	18.1
5 years – 8 years 364 days	16.3	17.0

³ Problem gamblers and at-risk problem gamblers as identified by the PGSI

9+ years	40.9	46.2
Number of years gambling online		
Less than 1 year	22.3	16.4
1 year – 1 year 364 days	13.1	11.9
2 years – 4 years 364 days	29.7	33.1
5+ years	34.9	38.5

6.6.2 Disability

In terms of disability, 12.7% felt that they had a long-standing illness, disability or infirmity, and of these over half (n=53; 53%) felt that this illness, disability or infirmity limited their activities. A chi-square test of independence was performed to examine the relation between problem gambling and disability. The relation between these variables was significant, ($X^2 = 7.76$, d.f.=1, $p < 0.01$). Problem gamblers were more likely to have a disability than non-problem gamblers.

6.6.3 Problem gambling

Using the PGSI, 14% were identified as problem gamblers (82.7% male, 17.3% female). A further 29% were classed as at risk problem gamblers, and 32.8% were classed as low-level problem gamblers, while 24.2% were identified as non-problem gamblers. As at-risk gamblers exhibit at least some level of problem gambling behaviour, for statistical considerations these groups were combined (Wood & Williams, 2007b). The convention of combining the ‘problem’ and ‘at-risk’ gamblers has been adopted in previous research (McBride & Derevensky, 2009; Vitaro, Arseneault & Tremblay, 1997; Volberg *et al.*, 2001). A Chi-square test was performed to examine the relation between sex and problem gambling. The relation between these variables was significant, ($X^2 = 10.24$, d.f. = 1, $p < 0.01$). Males were more likely than females to be a problem gambler. Those 35 years or older were more likely than those under 35 to be a problem gambler ($X^2 = 6.40$, d.f. = 1, $p < 0.01$).

6.6.4 Playing behaviour

6.6.4.1 Number of years gambling

Of the total sample, 40.9% indicated that they had been gambling online or offline for over nine years, and 34.9% indicated they had been gambling online for more than five years, while 22.3% said they had been gambling online for less than one year. Those that had been gambling online or offline for more than nine years were significantly more likely to be male ($X^2 = 49.35$, d.f.=1, $p < 0.01$), 35 years or older ($X^2 = 278.36$, d.f.=1, $p < 0.01$), and a problem gambler ($X^2 = 6.53$, d.f.=1, $p < 0.01$). Those that had been

gambling online for more than five years were significantly more likely to be male ($X^2=41.30$, d.f.=1, $p<0.01$), 35 years or older ($X^2=112.91$, d.f.=1, $p<0.01$). However, there was no significant difference in terms of problem gambling status ($X^2= 5.18$, d.f.=1, $p>0.01$).

6.6.4.2 Age first gambled on the internet

The majority of the participants first gambled on the internet between the ages of 18-24 years ($n = 376$, 38.6%) and 25 – 44 years ($n = 352$, 36.1%). A small percentage (7.7%) first gambled on the internet under the age of 18 years. A variable was created for all those who first gambled on the internet at age 24 years or younger, and all those who first gambled on the internet at age 25 years or older. A Chi-square test of independence was performed to examine the relation between problem gambling and first gambling on the internet at 24 years or younger. The relation between these variables was not significant ($X^2=0.11$, d.f =1, $p>0.01$). A chi-square test of independence was performed to examine the relation between sex and first gambling on the internet at 24 years or younger. The relation between these variables was significant ($X^2=28.19$, d.f.=1, $p<0.01$). Females were significantly more likely to first gamble on the internet at age 24 years or younger, compared to males.

6.6.4.3 Length of gambling session

There was little variance in the average length of a gambling session online. The median was between one hour and one hour and 59 minutes ($n = 212$, 23.3%). A total of 14.1% of participants gambled online for less than 10 minutes and 16.3% gambled online for more than four hours at a time. However there were significant sex differences with the majority of males (26%) gambling for between one hour and one hour and 59 minutes, while the majority of females (25.6%) gambled for less than 10 minutes. Females were significantly more likely to gamble for less than one hour ($X^2=44.56$, d.f.=1, $p<0.01$) compared to males, and those that gambled online for more than four hours per gambling session were significantly more likely to be a problem gambler ($X^2=9.90$, d.f.=1, $p<0.01$), to be 35 years or older ($X^2=5.37$, d.f.=1, $p<0.01$), and to be male ($X^2=7.91$, d.f.=1, $p<0.01$), than those that gambled for less than four hours per online gambling session.

A Chi-square test of independence was performed to examine the relation between regular gamblers and non-regular gamblers and gambling online for more than four

hours per gambling session. For the activities roulette, blackjack, dog-racing, bingo, fruit machines, football pools, lottery and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's Exact test was selected for Pearson's chi-square. Those that gambled online for more than four hours per gambling session were also significantly more likely to be regular poker players ($X^2=31.87$, d.f.=1, $p<0.01$), regular horse-race betters ($X^2=25.71$, d.f.=1, $p<0.01$), regular dog-race betters ($X^2=8.01$, d.f.=1, $p<0.01$), regular bingo players ($X^2=13.66$, d.f.=1, $p<0.01$), regular fruit machine players ($X^2=11.73$, d.f.=1, $p<0.01$) or regular betting exchange gamblers ($X^2=8.66$, d.f.=1, $p<0.01$), than those that gambled online for less than four hours. There was no significant difference between regular and non-regular sports betters ($X^2=2.27$, d.f.=1, $p>0.01$), roulette players ($X^2=3.88$, d.f.=1, $p>0.01$), blackjack players ($X^2=0.52$, d.f.=1, $p>0.01$), spread betters ($X^2=1.01$, d.f.=1, $p>0.01$), football pools players ($X^2=0.25$, d.f.=1, $p>0.01$), lottery players ($X^2=2.16$, d.f.=1, $p>0.01$) or instant win players ($X^2=0.08$, d.f.=1, $p>0.01$) and gambling for more than four hours per online gambling session. For the activities roulette, blackjack, dog-racing, bingo, fruit machines, football pools, lottery and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's exact test was selected for Pearson's chi-square.

In terms of reasons for ending a gambling session, those that gambled online for more than four hours per gambling session were significantly more likely to end a gambling session because they were tired ($X^2=9.17$, d.f.=1, $p<0.01$), and significantly less likely to end a gambling session out of boredom ($X^2=22.20$, d.f.=1, $p<0.01$), than those that gambled online for less than four hours.

6.6.5 What brings a gambling session to an end?

The most frequently cited reason for ending a gambling session was boredom (n= 407, 45.3%), followed by having something else to do (n=306, 34.1%), feeling tired (n= 287; 32.0%) and reaching a target (n = 257; 28.6%). There was no significant difference between problem gamblers and non-problem gamblers.

Table 7: Reasons for ending a gambling session, by problem gambling status and sex

	Problem gambler % (n=815)		X^2	p	Sex % (n=887)		X^2	p	Total sample % (n=898)
	Yes	No			Male	Female			
Bored	42.0	48.2	3.11	>0.01	42.0	61.6	21.61	<0.01	45.3
Tired	33.0	32.5	0.02	>0.01	32.3	31.4	0.05	>0.01	32.0
Something else to do	33.0	35.8	0.65	>0.01	35.4	29.1	2.46	>0.01	34.1
Reaching a target	31.0	28.3	0.74	>0.01	32.3	14.5	21.33	<0.01	28.6
Lost too much	31.6	11.8	48.57	<0.01	20.4	20.9	0.02	>0.01	20.7
Other	14.4	21.6	6.96	<0.01	20.3	7.0	16.84	<0.01	17.5
Run out of money	26.1	8.1	48.56	<0.01	13.1	28.5	24.13	<0.01	16.3
Won a lot	18.7	11.6	8.10	<0.01	16.5	9.9	4.71	>0.01	15.3
Frustration	18.7	6.6	27.82	<0.01	11.7	11.0	0.07	>0.01	11.5

Problem gamblers were significantly more likely to end a gambling session due to running out of money ($X^2=48.56$, d.f.=1, $p<0.01$), losing too much money ($X^2=48.57$, d.f.=1, $p<0.01$), and winning a lot of money ($X^2=8.10$, d.f.=1, $p<0.01$) compared to non-problem gamblers. Non-problem gamblers were significantly more likely to end a gambling session due to some other reason ($X^2=6.96$, d.f.=1, $p<0.01$).

There were few differences between males and females in terms of reasons for ending a gambling session. Females were significantly more likely to end a gambling session due to boredom ($X^2=21.61$, d.f.=1, $p<0.01$), and running out of money ($X^2=24.13$, d.f.=1, $p<0.01$) compared to males. Males were significantly more likely to end a gambling session due to reaching a target ($X^2=21.33$, d.f.=1, $p<0.01$), or for some other reason ($X^2=16.84$, d.f.=1, $p<0.01$) compared to females.

In terms of age, those younger than 35 years were significantly more likely to end a gambling session due to boredom ($X^2=47.06$, d.f.=1, $p<0.01$), losing too much money ($X^2=19.84$, d.f.=1, $p<0.01$), winning a lot of money ($X^2=12.95$, d.f.=1, $p<0.01$), and frustration ($X^2=25.79$, d.f.=1, $p<0.01$) compared to those 35 years or older. Those 35 years or older were significantly more likely to end a gambling session because of some other reason ($X^2=8.34$, d.f.=1, $p<0.01$).

6.6.6 Chasing and near miss

Those that engage in chasing behaviour were significantly more likely to be a problem gambler ($X^2=1267.19$, d.f.=1, $p<0.01$) than those that did not engage in chasing behaviour. Those that indicated they would be more likely to play again after experiencing a near miss were significantly more likely to be problem gamblers ($X^2=24.10$, d.f.=1, $p<0.01$). There was no relationship between near miss and gambling for more than four hours per session ($X^2=0.68$, d.f.=1, $p>0.01$). However those that engaged in chasing behaviour were significantly more likely to play again after experiencing a near miss ($X^2=36.92$, d.f.=1, $p<0.01$) than those that did not engage in chasing behaviour. Therefore, experiencing a near miss may be more likely to lead to chasing behaviour than not experiencing a near miss.

6.6.7 Where do people participate in online gambling?

The majority of people participated in online gambling at home (n = 823; 84.4%), 3.3% said they participated in online gambling at work and 1.7% participated in online

gambling at a friends house. Over half of the participants (n= 513; 52.6%) said they participate in online gambling ‘anytime I feel like it’, followed by 19.3% participating in online gambling on a weekday evening.

6.6.8 Who do people participate in online gambling with?

Males were significantly more likely to gamble on the internet alone than females ($X^2=60.61$, d.f.=1, $p<0.01$). Females were significantly more likely to gamble on the internet with friends than males ($X^2=49.12$, d.f.=1, $p<0.01$). Those 35 years or older were more likely to gamble alone online ($X^2=14.28$, d.f.=1, $p<0.01$) than those younger than 35 years old. Those younger than 35 years old were significantly more likely to gamble with friends online, than those 35 years or older ($X^2=64.75$, d.f.=1, $p<0.01$). Problem gamblers were more likely than non-problem gamblers to gamble alone on the internet ($X^2=8.32$, d.f.=1, $p<0.01$).

6.6.9 Expenditure

A total of 41.2% of participants indicated that overall, in the last seven days, they had won money gambling online, while only 205 participants (21.0%) reported losing money. Those that indicated they had won in the last seven days were significantly more likely to be male ($X^2=36.42$, d.f. =1, $p<0.01$), there was no difference between problem gambling status ($X^2=1.85$, d.f. =1, $p>0.01$) and age ($X^2=0.00$, d.f. =1, $p>0.01$). Those that indicated their reason for gambling online was to win money were significantly more likely to indicate that overall, they had won money in the past seven days ($X^2=30.87$, d.f. =1, $p<0.01$), than those that did not indicate their reason for gambling was to win money.

6.6.10 Gambling activity

Among the online activities, poker was the most participated activity with 36.9% of participants stating that they play poker ‘most days’ online. This was followed by 21.1% participating in sports betting, followed by horse racing (12.0%). Offline gambling was participated in much less frequently with only 5.4% participating in sports betting ‘most days’, followed by poker (4.6%), lottery (4.0%), and horse race betting (3.8%). The offline activities were most frequently participated in ‘less than once a month’ suggesting that offline gambling is participated in less frequently than online gambling. Table 8 highlights the activities engaged in and their location as offline or online.

Table 8: Frequency of activities engaged in online and offline

Activity	Never (%)		Less than once a month (%)		1-4 times a month (%)		Most days (%)	
	Online	Offline	Online	Offline	Online	Offline	Online	Offline
Poker	37.9	47.5	14.4	32.2	10.8	15.6	36.9	4.6
Sports betting	49.6	65.7	15.7	18.7	13.5	10.2	21.1	5.4
Horse race betting	63.5	66.7	16.8	21.7	7.7	7.8	12.0	3.8
Betting exchange	80.9	N/A	4.9	N/A	4.4	N/A	9.7	N/A
Spread betting	83.4	N/A	4.5	N/A	3.1	N/A	9.0	N/A
Lottery	65.6	54.8	15.1	22.8	16.3	18.4	3.0	4.0
Football pools	84.5	84.0	8.6	10.1	4.6	4.8	2.3	1.1
Blackjack	76.3	66.4	16.0	26.6	5.6	6.0	2.1	1.0
Dog racing	86.3	85.6	7.9	10.5	3.9	2.8	1.9	1.1
Bingo	87.3	87.9	7.6	8.4	3.3	2.9	1.8	0.8
Fruit machines	85.7	79.6	7.6	12.2	5.0	6.9	1.6	1.3
Roulette	81.0	73.7	14.2	20.2	3.6	4.7	1.2	1.3
Instant win/scratchcards	79.8	69.8	14.4	20.5	4.6	7.2	1.2	2.5
Private betting	N/A	63.4	N/A	22.7	N/A	11.3	N/A	2.6

A total of 74.1% said that they also gamble offline, while 25.9% do not gamble offline at all. Of those that do gamble offline, 47.1% gamble more frequently on the internet compared with offline gambling and 18.1% gamble less frequently on the internet compared with offline gambling, while 8% indicated that they gamble about the same online and offline. A Chi-square test of independence was performed to examine the relation between problem gambling and whether they also gamble offline. The relation between these variables was not significant ($X^2 = 1.86$, d.f = 1, $p > 0.01$). Whether a person gambles offline or not is unlikely to be an indicator of problem gambling status. A chi-square test of independence was performed to examine the relation between sex and whether they gamble offline. The relation between these variables was not significant, ($X^2 = 0.16$, d.f = 1, $p > 0.01$). The relation between age and whether someone also gambles offline was not significant. ($X^2 = 1.89$, d.f = 1, $p > 0.01$).

6.6.11 Experience of gambling

6.6.11.1 What emotions were felt when gambling online?

Excitement was the most frequently cited emotion experienced when gambling online (45.7%), followed by feeling happy (29.2%), feeling relaxed (25.3%) and feeling euphoria (22.8%). Additionally, 41.8% reported feeling no different when gambling online. The total responses for each option can be seen in Table 9.

Table 9: Emotions experienced when gambling online, by problem gambling status and sex

	Problem gambler (n=820) %		X^2	p	Sex (n=912) %		X^2	p	Total sample (n=975) %
	Yes	No			Male	Female			
Excitement	54.7	38.2	21.91	<0.01	45.1	48.6	0.69	>0.01	44.8
No different	30.7	50.0	30.84	<0.01	44.2	31.8	8.83	<0.01	41.8
Happy	34.6	25.4	8.10	<0.01	30.7	22.5	4.53	>0.01	28.7
Relaxed	28.9	22.6	4.15	>0.01	24.8	27.7	0.66	>0.01	25.3
Euphoria	34.3	15.0	42.08	<0.01	22.6	23.7	0.10	>0.01	22.7
Frustrated	24.1	12.8	17.54	<0.01	17.9	14.5	1.15	>0.01	17.2
Anger	24.6	8.5	39.88	<0.01	17.2	6.9	11.40	<0.01	15.1
Escape	16.4	5.4	27.12	<0.01	9.8	11.6	0.50	>0.01	10.3
Irritable	13.6	4.1	24.42	<0.01	8.9	3.5	5.75	>0.01	7.8
Other	8.2	8.1	0.00	>0.01	8.7	3.5	5.33	>0.01	7.5
Guilty	12.7	1.3	45.41	<0.01	5.3	9.2	3.90	>0.01	6.0
Ashamed	7.9	1.3	22.42	<0.01	3.5	6.9	4.10	>0.01	4.1
Empty	6.5	1.1	18.13	<0.01	3.8	1.7	1.80	>0.01	3.4
Lonely	5.1	0.9	13.90	<0.01	3.2	1.7	1.12	>0.01	3.3

A Chi-square test of independence was performed to examine the relation between sex and emotions experienced when gambling online. Only anger showed a significant difference between males and females, $X^2 = 11.40$, $d.f. = 1$, $p < 0.01$. Males were more likely to experience anger when gambling on the internet than females. Additionally the relationship between sex and feeling no different when gambling online was significant ($X^2 = 8.83$, $d.f. = 1$, $p < 0.01$). Males were more likely to feel no different when gambling online than females.

On the other hand there were much more differences between problem gamblers and non-problem gamblers in terms of emotions felt when gambling online. Compared to non-problem gamblers, problem gamblers were significantly more likely to feel euphoria ($X^2 = 42.08$, $d.f. = 1$, $p < 0.01$), excitement ($X^2 = 21.91$, $d.f. = 1$, $p < 0.01$), anger ($X^2 = 39.88$, $d.f. = 1$, $p < 0.01$), escapism ($X^2 = 27.12$, $d.f. = 1$, $p < 0.01$), lonely ($X^2 = 13.90$, $d.f. = 1$, $p < 0.01$), frustrated ($X^2 = 17.54$, $d.f. = 1$, $p < 0.01$), irritable ($X^2 = 24.42$, $d.f. = 1$, $p < 0.01$), ashamed ($X^2 = 22.42$, $d.f. = 1$, $p < 0.01$), empty ($X^2 = 18.13$, $d.f. = 1$, $p < 0.01$), guilty ($X^2 = 45.41$, $d.f. = 1$, $p < 0.01$) and happy ($X^2 = 8.10$, $d.f. = 1$, $p < 0.01$). Compared to problem gamblers, non-problem gamblers were significantly more likely to feel no different when gambling on the internet ($X^2 = 30.84$, $d.f. = 1$, $p < 0.01$). This suggested that problem gamblers experience a range of emotions when gambling online and may experience extreme highs and lows.

In terms of age, compared to those 35 years or older, those under 35 years old were significantly more likely to feel euphoria ($X^2 = 12.68$, $d.f. = 1$, $p < 0.01$), excitement ($X^2 = 14.04$, $d.f. = 1$, $p < 0.01$), frustrated ($X^2 = 13.86$, $d.f. = 1$, $p < 0.01$), and guilty ($X^2 = 6.01$, $d.f. = 1$, $p < 0.01$). Compared to those younger than 35 years, those 35 years or older were significantly more likely to feel no different ($X^2 = 14.22$, $d.f. = 1$, $p < 0.01$), when gambling on the internet.

6.6.11.2 Reasons for gambling online

Participants could tick as many options as they felt applied to them. Convenience was the most frequently cited reason for gambling online (80.4%), followed by accessibility (66.8%), comfort (64.5%), availability (58.8%), to win money (57.8%), enjoyment (48.7%), the challenge (33.5%) and better value for money (30.4%). The total responses for each option can be seen in Table 10.

Table 10: Reasons for gambling online, by gambling severity and sex

	Problem gambler (n=821) %		X^2	p	Sex (n=912) %		X^2	p	Total sample (n=975) %
	Yes	No			Male	Female			
Convenience	80.7	80.6	0.00	>0.01	83.4	72.8	10.24	<0.01	80.4
Access	45.7	54.3	4.96	>0.01	71.0	52.0	23.10	<0.01	66.8
Comfort	67.4	63.7	1.25	>0.01	68.9	49.7	22.71	<0.01	64.5
Availability	64.3	54.5	8.00	<0.01	64.1	38.2	39.21	<0.01	58.8
To win money	64.6	55.1	7.46	<0.01	62.0	44.5	17.64	<0.01	57.8
Enjoyment	52.1	48.5	1.06	>0.01	52.2	38.7	10.23	<0.01	48.7
Challenge	40.8	31.8	7.03	<0.01	38.0	17.3	26.69	<0.01	33.5
Better value	34.3	28.8	2.77	>0.01	33.8	16.8	19.23	<0.01	30.4
Bet at own pace	33.4	26.7	4.36	>0.01	28.8	33.5	1.49	>0.01	29.4
High speed of play online	29.2	28.0	0.14	>0.01	30.9	16.8	13.75	<0.01	27.8
Multiple games	26.3	28.6	0.53	>0.01	29.2	19.1	7.28	<0.01	26.9
Greater flexibility in stake size	25.5	25.6	0.00	>0.01	27.5	12.7	16.42	<0.01	24.3
Offline venues too far	26.1	25.0	0.12	>0.01	25.8	18.5	4.10	>0.01	24.2
Bored	28.0	21.2	5.22	>0.01	18.4	45.7	57.83	<0.01	23.1
Free bets	24.7	22.4	0.58	>0.01	23.0	24.3	0.12	>0.01	22.9
Anonymity	24.6	16.5	8.45	<0.01	22.7	16.2	3.56	>0.01	21.8
Variety of games	28.9	16.7	17.58	<0.01	23.4	15.6	4.99	>0.01	21.7
Stimulation	30.3	13.9	32.77	<0.01	22.6	13.9	6.45	<0.01	20.6
Spend less online	13.9	17.7	2.22	>0.01	14.3	22.5	7.05	<0.01	15.6
Free practice games	13.6	17.7	2.57	>0.01	13.5	23.1	9.92	<0.01	15.1
Bet in play	18.1	12.0	6.13	<0.01	16.9	4.0	18.75	<0.01	14.4
Dislike atmosphere in offline venues	8.2	7.9	0.03	>0.01	8.3	9.2	0.18	>0.01	8.6
Escape	13.9	3.4	30.21	<0.01	8.5	6.9	0.47	>0.01	8.1
Competition	8.2	8.3	0.00	>0.01	9.5	1.2	13.33	<0.01	7.8
Safer	5.7	4.3	0.84	>0.01	5.1	5.8	0.12	>0.01	5.3
Other	5.4	4.5	0.35	>0.01	4.3	5.2	0.25	>0.01	4.4
Influenced by others	2.5	1.5	1.17	>0.01	1.8	3.5	2.01	>0.01	2.0
Adverts	2.0	1.3	0.63	>0.01	0.8	4.6	13.48	<0.01	1.6

A Chi-square test of independence was performed to examine the relation between sex and reasons for gambling on the internet. Eighteen of the reasons were found to be significantly different between males and females, suggesting that males and females are likely gambling on the internet for completely different reasons.

Compared to females, males were significantly more likely to gamble on the internet because it is convenient ($X^2=10.24$, d.f.=1, $p<0.01$), for the availability ($X^2=39.21$, d.f.=1, $p<0.01$), accessibility ($X^2=23.10$, d.f.=1, $p<0.01$), and comfort ($X^2=22.71$, d.f.=1, $p<0.01$), the high speed of game play ($X^2=13.75$, d.f.=1, $p<0.01$), better value for money ($X^2=19.23$, d.f.=1, $p<0.01$), the ability to 'bet-in-play' ($X^2=18.75$, d.f.=1, $p<0.01$), the greater flexibility in stake size ($X^2=16.42$, d.f.=1, $p<0.01$), the ability to play multiple games ($X^2=7.28$, d.f.=1, $p<0.01$), to win money ($X^2=17.64$, d.f.=1, $p<0.01$), because it is enjoyable ($X^2=10.23$, d.f.=1, $p<0.01$), for stimulation ($X^2=6.45$, d.f.=1, $p<0.01$), for the competition ($X^2=13.33$, d.f.=1, $p<0.01$), and for the challenge ($X^2=26.69$, d.f.=1, $p<0.01$). Compared to males, females were significantly more likely to gamble on the internet because they were influenced by the gambling advertisements ($X^2=13.48$, d.f.=1, $p<0.01$), for the ability to spend less gambling online ($X^2=7.05$, d.f.=1, $p<0.01$), to practice for free ($X^2=9.92$, d.f.=1, $p<0.01$), and out of boredom ($X^2=57.83$, d.f.=1, $p<0.01$).

There were fewer differences between problem gambling status and reasons for gambling on the internet. Significant differences were found for eight of the reasons. Compared to non-problem gamblers, problem gamblers were significantly more likely to gamble on the internet because of the anonymity ($X^2=8.45$, d.f.=1, $p<0.01$), the availability ($X^2=8.00$, d.f.=1, $p<0.01$), the ability to 'bet-in-play' ($X^2=6.13$, d.f.=1, $p<0.01$), the wide variety of games available online ($X^2=17.58$, d.f.=1, $p<0.01$), to win money ($X^2=7.46$, d.f.=1, $p<0.01$), to escape ($X^2=30.21$, d.f.=1, $p<0.01$), for the stimulation ($X^2=32.77$, d.f.=1, $p<0.01$), and for the challenge ($X^2=7.03$, d.f.=1, $p<0.01$).

A Chi-square test of independence was also performed to examine the relation between age and reasons for gambling on the internet. There was found to be a significant difference between age and five of the 27 reasons, suggesting that there is not much difference between those under 35 years and those over 35 years old in terms of reasons for gambling on the internet. Compared to those 35 years or older, those younger than

35 years were significantly more likely to gamble on the internet for the high speed of play ($X^2=33.97$, d.f.=1, $p<0.01$), the greater variety of games available online ($X^2=7.76$, d.f.=1, $p<0.01$), the greater flexibility in stake size ($X^2=8.86$, d.f.=1, $p<0.01$), the ability to play multiple games ($X^2=25.60$, d.f.=1, $p<0.01$), and out of boredom ($X^2=30.08$, d.f.=1, $p<0.01$).

Those that gamble to win money are significantly more likely to end a gambling session due to feeling tired ($X^2=28.72$, d.f. =1, $p<0.01$), winning a lot of money ($X^2=18.38$, d.f =1, $p<0.01$), reaching a target ($X^2=12.37$, d.f =1, $p<0.01$), feeling frustrated ($X^2=19.31$, d.f =1, $p<0.01$), or having something else to do ($X^2=7.98$, d.f =1, $p<0.01$).

6.6.11.3 Age first gambled online and reasons for gambling online

A Chi-square test of independence was performed to examine the relation between age first gambled online and reasons for gambling online. The analysis showed that those who first gambled online 24 years old or younger were significantly more likely to gamble online for the high speed of play ($X^2=17.28$, d.f =1, $p<0.01$), the variety of games available ($X^2=14.63$, d.f =1, $p<0.01$), multi-gambling opportunities ($X^2=19.40$, d.f =1, $p<0.01$), out of boredom ($X^2=32.69$, d.f =1, $p<0.01$) and because they are influenced by others ($X^2=9.91$, d.f =1, $p<0.01$), than those who first gambled on the internet older than 24 years old.

6.6.11.4 Choosing a gambling website

The most frequently cited reason for choosing a particular gambling website was the brand name (n=510, 20%), followed by the free offers on the websites (n=479, 18.8%), and the ease of use (n=402, 15.8%).

Table 11: Reasons for choosing a website, by age and sex

	Age (n=849) %		X^2	p	Sex (n=851) %		X^2	p	Total sample (n=861) %
	Less than 35	35 or older			Male	Female			
Friends use it	36.3	17.1	38.54	<0.01	24.5	41.4	19.33	<0.01	27.7
Brand name	62.7	55.5	4.49	>0.01	62.3	47.9	11.63	<0.01	59.4
Free offers	60.8	49.6	10.57	<0.01	56.2	53.8	0.29	>0.01	55.8
Celebrity endorsement	6.8	2.1	9.94	<0.01	4.5	5.3	0.18	>0.01	4.9
Advertisements	15.6	8.0	11.29	<0.01	10.0	21.3	16.21	<0.01	12.2
Ease of use	33.3	37.3	1.47	>0.01	37.7	24.9	9.78	<0.01	34.9
Graphics	50.0	43.5	3.59	>0.01	49.7	36.1	10.07	<0.01	46.8
Variety of games	22.2	16.3	4.61	>0.01	20.7	15.4	2.40	>0.01	19.4
Other	30.0	22.4	6.12	<0.01	26.8	26.0	0.04	>0.01	26.4

Significant differences were found between sex and reasons for choosing a gambling website. Compared to males, females were significantly more likely to choose a website because their friends use it ($X^2=19.33$, d.f.=1, $p<0.01$), and because of an advertisement ($X^2=16.21$, d.f.=1, $p<0.01$). Compared to females, males were significantly more likely to choose a website based on the brand name ($X^2=11.63$, d.f.=1, $p<0.01$), recommendations from online forums ($X^2=9.78$, d.f.=1, $p<0.01$), and ease of use ($X^2=10.07$, d.f.=1, $p<0.01$).

In terms of age, compared to those 35 years or older, those younger than 35 years were significantly more likely to choose a website because their friends use it ($X^2=38.54$, d.f.=1, $p<0.01$), because of the free offers ($X^2=10.57$, d.f.=1, $p<0.01$), because of the celebrity endorsement ($X^2=9.94$, d.f.=1, $p<0.01$), because of advertisements ($X^2=11.29$, d.f.=1, $p<0.01$), and the variety of games available ($X^2=6.12$, d.f.=1, $p<0.01$). Compared to those younger than 35 years, those 35 years or older were more likely to choose a website for some other reason ($X^2=14.94$, d.f.=1, $p<0.01$).

The only reason to choose a website which differed between problem gamblers and non-problem gamblers was the free offers with problem gamblers significantly more likely to choose a gambling website based on the free offers than non problem gamblers ($X^2=9.35$, d.f.=1, $p<0.01$). Friend recommendation was most frequently cited as how individuals became aware of their first website (n=316; 32.4%).

6.6.11.5 Age first gambled online and choosing a website

A chi-square test of independence was performed to examine the relation between age first gambled online and the factors for choosing a gambling website. The analysis showed that those who first gambled on the internet 24 years or younger were significantly more likely to choose a website because their friends use it ($X^2=18.82$, d.f.=1, $p<0.01$), because of the free offers ($X^2=9.50$, d.f.=1, $p<0.01$), because of an advertisement ($X^2=12.59$, d.f.=1, $p<0.01$), and because of the variety of games available ($X^2=6.76$, d.f.=1, $p<0.01$)

6.6.12 The impact of structural characteristics on internet gambling behaviour

6.6.12.1 Communicating online

In terms of communicating online while gambling, 46.5% reported having communicated online while gambling. The most frequent method was using a chat box

(40.7%) and communicating on gambling forums online (29.6%). A total of 32.9% reported making friends through gambling online.

6.6.12.2 Gender swapping and lying about age

A total of 6.7% reported gender swapping online, and 6.8% said they had lied about their age online. Being underage was often given as an explanation for lying about age, while lying about sex appeared to be a tactical strategy. Males pretended to be female in order to appear 'weaker' to their opponents, females pretended to be male in order to appear more skilled and expert in the game. A Chi-square test of independence was performed to examine the relation between problem gambling and gender swapping online. The relation between these variables was not significant, ($X^2=1.25$, d.f.=1, $p>0.01$). A Chi-square test of independence was also performed to examine the relation between age and gender swapping online. The relation between these variables was significant, ($X^2=7.26$, d.f.=1, $p<0.01$). Those 35 or older were also more likely to indicate they had swapped gender online than those under 35 years old ($X^2=7.26$, d.f.=1, $p<0.01$). There was no significant difference between gender and gender swapping online, ($X^2=0.83$, d.f.=1, $p>0.01$).

Problem gamblers were more likely to lie about their age online than non-problem gamblers ($X^2=13.58$, d.f.=1, $p<0.01$). Those under 35 years old were more likely to lie about their age than those 35 years or older ($X^2=18.65$, d.f.=1, $p<0.01$). There was no difference between gender and lying about age.

6.6.12.3 Multi-gambling, practice games and autoplay features

A total of 47.3% said they have engaged in multi-gambling online, 35.6% reported playing the free practice games online and 17.8% reported using the autoplay features. In terms of engaging in multi-gambling online, playing practice games online and using the autoplay features when gambling online, the problem gamblers were significantly more likely to use the autoplay features than the non problem gamblers. An independent t-test showed that the difference between the problem gamblers and non-problem gamblers was significant ($t=5.09$, d.f.=611.958, $p<0.01$). There was no significant difference in terms of multi-gambling, and practice games online between the problem gamblers and the non-problem gamblers. However, there was a significant difference found for all three between males and females. Males were more likely to engage in multi-gambling and practice games online and to use autoplay features compared with

females. An independent t-test showed that the difference between males and females for engaging in multi-gambling ($t=6.44$, $d.f = 866$, $p<0.01$), practice games ($t = 6.56$, $d.f = 866$, $p<0.01$) and using autoplay features ($t=5.45$, $d.f = 866$, $p<0.01$) online was significant. Participants under the age of 35 years old were more likely to engage in multi-gambling online than those over the age of 35 years. An independent t-test showed that the difference between the two groups was significant ($t= 5.91$, $d.f = 862$, $p<0.01$).

6.6.12.4 Easy games and Skill games

A Chi-square test of independence was performed to examine the relation between preferring skill games and problem gambling status; sex; and age. There was no significant difference between those that prefer skill games and those that do not prefer skill games in terms of problem gambling status ($X^2=0.00$, $d.f=1$, $p>0.01$), sex ($X^2=5.79$, $d.f=1$, $p>0.01$), or age ($X^2=1.43$, $d.f=1$, $p>0.01$).

A Chi-square test of independence was performed to examine the relation between preferring easy games and problem gambling status, sex and age. Those preferring easy games were significantly more likely to be under 35 years of age ($X^2=21.73$, $d.f=1$, $p<0.01$) and female ($X^2=150.24$, $d.f=1$, $p<0.01$), than those that do not prefer easy games. There was no significant difference between problem gamblers and non-problem gamblers ($X^2=1.70$, $d.f=1$, $p>0.01$) in terms of gambling on easy games.

6.6.13 Opinions and perceptions of online gambling

The survey also contained the following 18 attitude statements rated on a Likert scale from 1 to 5, where 1 is 'strongly agree', 2 is 'agree', 3 is 'neither agree nor disagree', 4 is 'disagree' and 5 is 'strongly disagree':

- 1) *'I would prefer to gamble on websites that have information about responsible gambling'*
- 2) *'I would prefer to gamble on websites that regularly tell me how much I have lost'*
- 3) *'I would prefer to gamble on websites that regularly tell me how long I have been playing'*
- 4) *'I am attracted by the graphics on gambling websites'*
- 5) *'I am attracted by the sound effects on gambling websites'*
- 6) *'Internet gambling is safe'*

- 7) *'Some gambling websites are more trustworthy than others'*
- 8) *'I prefer gambling activities that are quick'*
- 9) *'I prefer online games that are easy to learn'*
- 10) *'I prefer online games with large jackpots'*
- 11) *'I like to gamble against other people online'*
- 12) *'I prefer online games with some element of skill'*
- 13) *'If I nearly win in an online game, then I am more likely to play again'*
- 14) *'It is easy for children to gamble on the internet'*
- 15) *'Internet gambling is more addictive than offline gambling'*
- 16) *'Gambling advertisements do not influence my gambling behaviour'*
- 17) *'The potential dangers of gambling should be advertised'*
- 18) *'I tend to spend more gambling using virtual money (online) than gambling using real money (offline)'*

Overall participants agreed with all of the statements except statements 5 (*'I am attracted by the graphics on gambling websites'*) and 18 (*'I tend to spend more gambling using virtual money (online) than gambling using real money (offline)'*). A *t*-test was carried out on each of the attitude statements to see whether there was a difference between problem gambling status and attitude; sex and attitude and age and attitude (see Table 12).

Table 12: Attitudes, by problem gambling status and sex.

Statement	Problem gambler (n=821) mean score		<i>t</i>	d.f	<i>p</i>	Sex (n=828) Mean score		<i>t</i>	d.f	<i>p</i>	Total sample (n=838)
	Yes	No				Male	Female				
1)	2.55	2.50	0.79	819.00	>0.01	2.60	2.24	4.80	826.00	<0.01	2.52
2)	2.35	2.50	-2.24	819.00	>0.01	2.50	2.22	3.90	282.05	<0.01	2.44
3)	2.59	2.69	-1.43	819.00	>0.01	2.75	2.30	5.75	826.00	<0.01	2.65
4)	2.79	2.98	-2.56	729.81	<0.01	2.95	2.71	2.72	826.00	<0.01	2.90
5)	3.48	3.72	-3.11	701.14	<0.01	3.72	3.25	5.54	279.51	<0.01	3.61
6)	2.50	2.56	-0.91	819.00	>0.01	2.43	2.92	-6.66	826.00	<0.01	2.52
7)	1.76	1.79	-0.49	706.53	>0.01	1.73	1.94	-3.19	266.13	<0.01	1.78
8)	2.70	2.90	-2.73	819.00	<0.01	2.91	2.43	6.31	335.62	<0.01	2.81
9)	2.75	2.87	-1.66	819.00	>0.01	2.98	2.24	11.04	345.91	<0.01	2.82
10)	2.91	3.13	-3.22	819.00	<0.01	3.14	2.66	5.89	826.00	<0.01	3.04
11)	2.56	2.50	0.72	818.00	>0.01	2.42	2.89	-4.49	816.00	<0.01	2.53
12)	2.05	1.99	0.82	818.00	>0.01	1.90	2.47	-6.68	816.00	<0.01	2.02
13)	2.37	2.70	-5.01	818.00	<0.01	2.61	2.34	3.44	816.00	<0.01	2.56
14)	2.57	2.70	-1.74	818.00	>0.01	2.69	2.48	2.50	294.65	<0.01	2.65
15)	2.46	2.88	-5.63	818.00	<0.01	2.74	2.51	2.56	816.00	<0.01	2.69
16)	2.56	2.24	4.47	740.71	<0.01	2.31	2.62	-3.51	816.00	<0.01	2.38
17)	1.96	2.11	-2.68	818.00	<0.01	2.07	1.96	1.60	816.00	>0.01	2.05
18)	2.94	3.18	-2.66	712.23	<0.01	3.11	3.01	0.96	292.89	>0.01	3.08

Nine attitude statements were found to be significantly different between problem gamblers and non-problem gamblers. Problem gamblers were significantly more likely to agree with the statements: *'I am attracted by the graphics on gambling websites'*; *'I prefer gambling activities that are quick'*; *'I prefer online games with large jackpots'*; *'If I nearly win in an online game, then I am more likely to play again'*; *'Internet gambling is more addictive than offline gambling'*; *'The potential dangers of gambling should be advertised'*; *'I tend to spend more gambling using virtual money (online) than gambling using real money (offline)'*; Non-problem gamblers were more likely to agree with the statement *'Gambling advertisements do not influence my gambling behaviour'*; and more likely to disagree with the statement *'I am attracted by the sound effects on gambling websites'*. Sixteen of the 18 attitude statements were found to be significantly different between males and females. Females were significantly more likely to agree with the statements *'I would prefer to gamble on websites that have information about responsible gambling'*; *'I would prefer to gamble on websites that regularly tell me how much I have lost'*; *'I would prefer to gamble on websites that regularly tell me how long I have been playing'*; *'I am attracted by the graphics on gambling websites'*; *'I prefer gambling activities that are quick'*; *'I prefer online games that are easy to learn'*; *'I prefer online games with large jackpots'*; *'If I nearly win in an online game, then I am more likely to play again'*; *'It is easy for children to gamble on the internet'* and *'Internet gambling is more addictive than offline gambling'*. Males were significantly more likely to agree with the statements *'Internet gambling is safe'*; *'Some gambling websites are more trustworthy than others'*; *'I like to gamble against other people online'*; *'I prefer online games with some element of skill'*, and *'Gambling advertisements do not influence my gambling behaviour'* and disagree with statement the *'I am attracted by the sound effects on gambling websites'*. A *t*-test was also carried out on each of the attitude statements to see whether there was a difference between age and attitude. Six of the 18 attitude statements were found to be significantly different between those under 35 years old and those 35 years or over. Thus the results would suggest that more differences in attitude are likely to be found between males and females rather than those under 35 years and those over 35 years old.

A *t*-test was also carried out on each of the attitude statements to see whether there was a difference between number of years gambling online and attitude. Eleven of the 18 attitude statements were found to be significantly different between those gambling for

five or more years online and those gambling for less than five years online. Those that had been gambling online for less than five years were significantly more likely to agree with the statements *'I would prefer to gamble on websites that have information about responsible gambling'*; *'I would prefer to gamble on websites that regularly tell me how much I have lost'*; *'I would prefer to gamble on websites that regularly tell me how long I have been playing'*; *'I am attracted by the graphics on gambling websites'*; *'I prefer gambling activities that are quick'*; *'I prefer online games that are easy to learn'*; *'I like to gamble against other people online'*; *'If I nearly win in an online game, then I am more likely to play again'* and *'It is easy for children to gamble on the internet'* while those who had been gambling online for more than five years were significantly more likely to agree with the statements *'Internet gambling is safe'* and *'Some gambling websites are more trustworthy than others'*.

6.6.13.1 Age first gambled online and attitude

A *t*-test was carried out on each of the attitude statements to see whether there was a difference between age first gambled on the internet and attitude. Seven of the 18 attitude statements were found to be significantly different between those that were younger than 24 when they first gambled on the internet and those who were older than 24 when they first gambled on the internet. Those who first gambled on the internet 24 years or younger were more likely to agree with the following statements: *'I would prefer to gamble on websites that regularly tell me how long I have been playing'*; *'I am attracted by the graphics on gambling websites'*; *'I prefer online games that are easy to learn'*; *'I like to gamble against other people online'*; *'If I nearly win in an online game, then I am more likely to play again'*; *'It is easy for children to gamble on the internet'*; *'I tend to spend more gambling using virtual money (online) than gambling using real money (offline)'*.

6.6.13.2 Internet gambling is more addictive

Those that think internet gambling is more addictive than offline gambling were significantly more likely to be female ($X^2=23.51$, d.f=1, $p<0.01$) and a problem gambler ($X^2=37.63$, d.f=1, $p<0.01$) than those that did not agree with the statement.

In terms of reasons for gambling online, those who thought internet gambling was more addictive than offline gambling were significantly more likely to gamble online because of the ability to 'bet in-play' ($X^2=6.82$, d.f=1, $p<0.01$), out of boredom ($X^2=10.57$, d.f=1,

$p < 0.01$) and to escape ($X^2 = 8.95$, d.f. = 1, $p < 0.01$). They were significantly less likely to gamble online because of the ability to spend less gambling ($X^2 = 6.39$, d.f. = 1, $p < 0.01$), and to engage in multi-gambling ($X^2 = 6.96$, d.f. = 1, $p < 0.01$) than those that did not agree with the statement.

One attitude statement “*Internet gambling is more addictive than offline gambling*” was rated differently between those who stated they gambled to escape and those who stated they did not gamble to escape. Those who gambled to escape were significantly more likely to agree with the statement ($t = -3.96$, d.f. = 825, $p < 0.01$). There was no significant difference for any of the other attitude statements. Those that gamble online to escape were significantly more likely to gamble online for the anonymity ($X^2 = 9.60$, d.f. = 1, $p < 0.01$).

6.6.13.3 *Internet gambling is safe*

One of the attitude statements in the survey was “*Internet gambling is safe*”. This was transformed into a binary variable for those that agree and those that do not agree (including those that neither agree nor disagree). A t -test was then carried out on each of the other attitude statements to see whether there was a difference between agreeing that internet gambling is safe and attitude. Those who thought internet gambling was safe were significantly more likely to agree with the statements ‘*Some gambling websites are more trustworthy than others*’; ‘*I like to gamble against other people online*’; ‘*I prefer online games with some element of skill*’ and ‘*Gambling advertisements do not influence my gambling behaviour*’. Those that thought internet gambling was not safe were significantly more likely to agree with the statements ‘*I would prefer to gamble on websites that regularly tell me how much I have lost*’; ‘*I would prefer to gamble on websites that regularly tell me how long I have been playing*’ and ‘*Internet gambling is more addictive than offline gambling*’.

A chi-square test of independence was performed to examine the relation between agreeing that internet gambling is safe and website choice. The analysis showed that those who agreed internet gambling was safe were significantly more likely to choose a gambling website based on the brand name ($X^2 = 26.38$, d.f. = 1, $p < 0.01$), the free offers ($X^2 = 16.50$, d.f. = 1, $p < 0.01$), the celebrity endorsement ($X^2 = 9.11$, d.f. = 1, $p < 0.01$), recommendations from forums ($X^2 = 7.72$, d.f. = 1, $p < 0.01$), ease of use ($X^2 = 21.38$, d.f. = 1,

$p < 0.01$), the graphics ($X^2 = 22.72$, d.f. = 1, $p < 0.01$), and the variety of games available ($X^2 = 11.08$, d.f. = 1, $p < 0.01$).

6.6.14 Disadvantages of online gambling

The most frequently cited disadvantage of online gambling was being worried about fraud (32.7%), followed by being worried that the bets might be rigged (25.6%), a lack of atmosphere (21.0%), and not wanting to give out personal information (20.6%). Additionally 22.5% reported that there are no disadvantages to online gambling. The total responses for each option can be seen in Table 13.

Table 13: Disadvantages of online gambling, by problem gambling status and sex

	Problem gambler (n=815) %		X^2	p	Sex (n=885) %		X^2	p	Total sample (n=898) %
	Yes	No			Male	Female			
Worried about fraud	34.10	31.70	0.53	>0.01	30.00	44.20	12.63	<0.01	32.70
The bets might be rigged	31.20	21.10	10.73	<0.01	20.60	46.50	48.72	<0.01	25.60
None	15.50	27.60	16.82	<0.01	25.70	8.10	24.60	<0.01	22.50
No atmosphere	24.40	20.50	1.74	>0.01	20.50	22.70	0.41	>0.01	21.00
Do not trust the websites	23.50	18.30	3.27	>0.01	18.00	31.40	15.33	<0.01	20.70
Do not want to give out personal information	22.10	20.00	0.49	>0.01	18.70	29.70	10.18	<0.01	20.60
Have to wait to collect winnings	27.20	13.40	24.55	<0.01	21.00	16.30	1.95	>0.01	20.10
Can not see your opponent	19.80	20.90	0.16	>0.01	19.60	20.30	0.04	>0.01	19.80
Need a credit card	20.30	14.70	4.55	>0.01	15.30	25.00	9.19	<0.01	17.10
Not as real as offline gambling	21.50	12.70	11.14	<0.01	16.00	16.30	0.01	>0.01	15.90
Easier to hide gambling problem	19.80	7.30	27.87	<0.01	12.50	12.20	0.01	>0.01	12.30
Other	8.90	9.50	0.09	>0.01	8.70	9.30	0.06	>0.01	8.70

Compared to non-problem gamblers, problem gamblers were significantly more likely to believe there were no disadvantages of online gambling ($X^2=16.82$, d.f=1, $p<0.01$), to be worried about the bets being rigged ($X^2=10.73$, d.f=1, $p<0.01$), that it was not as real as offline gambling ($X^2=11.14$, d.f=1, $p<0.01$), having to wait to collect winnings ($X^2=24.55$, d.f=1, $p<0.01$), and that it is easier to hide a gambling problem ($X^2=27.87$, d.f=1, $p<0.01$).

The relation between sex and opinions on the disadvantages of online gambling was also examined. Compared to females, males were significantly more likely to believe that there were no disadvantages of online gambling ($X^2=24.60$, d.f=1, $p<0.01$). Compared to males, females were significantly more likely to believe that a disadvantage of online gambling was the requirement of a credit card ($X^2=9.19$, d.f=1, $p<0.01$), to be worried about fraud ($X^2=12.63$, d.f=1, $p<0.01$), to think the websites are not trustworthy ($X^2=15.33$, d.f=1, $p<0.01$), to be worried about the bets being rigged ($X^2=48.72$, d.f=1, $p<0.01$), and having to give out personal information ($X^2=10.18$, d.f=1, $p<0.01$). There were no significant differences between age and disadvantages of online gambling.

6.6.14.1 Number of years gambling online and perception of the disadvantages of online gambling

A Chi-square test of independence was performed to examine the relation between the number of years a person had been gambling online and their opinion on the disadvantages of online gambling. A categorical variable was created with all those indicating they had been gambling online for 5 or more years in one group, and all those that indicated they had been gambling for '2 years to 4 years 364 days'; '1 year to 1 year 364 days' or 'less than one year' as one group. It was felt that those who had been gambling online for less than five years may have started gambling due to the recent 'craze' and popularity of online gambling and may therefore have slightly different characteristics than those who had been gambling online for more than five years. Some would argue the poker phenomenon really started in 2005 and led to a huge increase in online gambling (Stewart, 2006).

The relationship between gambling for more than five years online and the disadvantages of gambling online were examined by using chi-square. Compared to those who had been gambling online for less than five years, those who had been

gambling online for more than five years were significantly more likely to think that there were no disadvantages of online gambling ($X^2= 13.25$, d.f=1, $p<0.01$). Those that had been gambling online for less than five years were significantly more likely to think that a disadvantage is needing a credit card ($X^2= 8.72$, d.f=1, $p<0.01$), worried that the bets might be rigged ($X^2= 10.43$, d.f=1, $p<0.01$), and that you can not see your opponent ($X^2= 13.86$, d.f=1, $p<0.01$). There were no significant differences between the other disadvantages of online gambling and number of years gambling online.

6.6.14.2 Age first gambled online and opinions on the drawbacks of online gambling

A Chi-square test of independence was performed to examine the relation between age first gambled online and opinions on the drawbacks of gambling online. The analysis showed that those who first gambled online 24 years old or younger were significantly more likely to think there were no disadvantages ($X^2=6.15$, d.f=1, $p<0.01$), the bets might be rigged ($X^2=12.52$, d.f=1, $p<0.01$), and that there was a lack of atmosphere ($X^2=8.51$, d.f=1, $p<0.01$).

6.6.14.3 Disadvantage: 'online gambling is not as real as offline gambling'

A Chi-square test of independence was performed to examine the relation between those that thought a disadvantage of online gambling was that it was not as real as offline gambling, and their reasons for gambling online. Those that thought a disadvantage of online gambling was it is not as real as offline gambling were significantly more likely to gamble online out of boredom, than those who did not think this was a disadvantage ($X^2=9.48$, d.f=1, $p<0.01$). No other significant differences were found between the other reasons for gambling online.

6.6.15 Differences between those that participate in different gambling activities

6.6.15.1 Online gambling activity and level of problem

A new variable was created for regular and non-regular gamblers. Those participants that indicated they participated in an activity online 'most days' were classed as regular gamblers, while those that indicated '1-4 times a month'; 'less than once a month', or 'never' were classed as non-regular gamblers. This was repeated for each of the online activities. For example, someone who indicated they played poker 'most days' but 'never' played poker would be classed as a regular poker player and a non-regular bingo player.

A Chi-square test of independence was performed to examine the relation between regular gamblers and non-regular gamblers in terms of problem gambling for each of the following online gambling activities: poker; blackjack, horse-race betting; dog-race betting; sports betting; spread betting; betting exchanges; bingo; football pools and lottery. For the activities roulette, and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's exact test was selected for Pearson's chi-square.

Compared to non-regular gamblers, the regular gamblers who participated in online roulette ($X^2=36.26$, d.f.=1, $p<0.01$), online horse-race betting ($X^2=7.85$, d.f.=1, $p<0.01$), online sports betting ($X^2=25.40$, d.f.=1, $p<0.01$), online spread betting ($X^2=6.27$, d.f.=1, $p<0.01$), and online fruit machine games ($X^2=11.80$, d.f.=1, $p<0.01$), were significantly more likely to be problem gamblers. There were no differences in terms of problem gambling status between regular and non-regular online poker players ($X^2=0.58$, d.f.=1, $p>0.01$), regular and non-regular online blackjack players ($X^2=5.41$, d.f.=1, $p>0.01$), regular and non-regular online dog-race betters ($X^2=0.25$, d.f.=1, $p>0.01$), regular and non-regular betting exchange users ($X^2=0.15$, d.f.=1, $p>0.01$), regular and non-regular online bingo players ($X^2=4.72$, d.f.=1, $p>0.01$), regular and non-regular online football pools players ($X^2=5.41$, d.f.=1, $p>0.01$), regular and non-regular online lottery players ($X^2=3.06$, d.f.=1, $p>0.01$), and regular and non-regular instant win players ($X^2=0.50$, d.f.=1, $p>0.01$).

The categories 'most days' and '1-4 times a month' were combined to create a new variable of frequent gamblers. Due to the low numbers of people participating in activities 'most days' these categories were combined, as it was felt that people who participate in an activity at least once a month could still be classed as a regular gambler. Compared to non-frequent gamblers, frequent gamblers who participated in online roulette ($X^2=8.49$, d.f.=1, $p<0.01$), online horse-race betting ($X^2=12.09$, d.f.=1, $p<0.01$), online sports betting ($X^2=20.18$, d.f.=1, $p<0.01$), online bingo ($X^2=6.44$, d.f.=1, $p<0.01$), and online fruit machines ($X^2=7.83$, d.f.=1, $p<0.01$) were significantly more likely to be a problem gambler. There was no significant difference between frequent and non-frequent gamblers who participated in online poker ($X^2=0.21$, d.f.=1, $p>0.01$), online blackjack ($X^2=4.99$, d.f.=1, $p>0.01$), online dog-race betting ($X^2=2.06$, d.f.=1, $p>0.01$), online spread betting ($X^2=4.01$, d.f.=1, $p>0.01$), online betting exchanges ($X^2=1.30$,

d.f=1, $p>0.01$), online football pools ($X^2=2.73$, d.f=1, $p>0.01$), online lottery ($X^2=1.17$, d.f=1, $p>0.01$), or online instant win games ($X^2=2.66$, d.f=1, $p>0.01$).

Those that indicated they participated in two or more activities online most days were significantly more likely to be a problem gambler than those that did not participate in two or more activities online most days ($X^2=30.24$, d.f=1, $p<0.01$). Regular online poker players were significantly less likely to participate in two or more activities online most days compared to non-regular poker players ($X^2=150.28$, d.f=1, $p<0.01$). However, regular online horse race betters ($X^2=84.81$, d.f=1, $p<0.01$), regular online sports betters ($X^2=304.01$, d.f=1, $p<0.01$), and regular online spread betters ($X^2=176.24$, d.f=1, $p<0.01$) were significantly more likely to participate in two or more online activities most days compared to their non-regular counterparts.

6.6.15.2 Age first gambled online and activity participate in 'most days'

A Chi-square test of independence was performed to examine the relation between age first gambled online and activity they participate in 'most days' online. There were very few differences in terms of activity. The analysis showed that those who first gambled online at age 25 years or older were significantly more likely to be regular horse-race betters ($X^2=25.91$, d.f=1, $p<0.01$) and regular betting exchange players ($X^2=11.35$, d.f=1, $p<0.01$) than those that first gambled on the internet at age 24 years or younger. There were no significant differences for the other online activities.

6.6.15.3 Online gambling activity and sex

A Chi-square test of independence was performed to examine the relation between regular gamblers and non-regular gamblers in terms of sex for each of the online gambling activities. For the activities roulette, blackjack, dog-race betting, bingo, fruit machines, football pools, lottery and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's exact test was selected for Pearson's chi-square. The regular gamblers who participated in online poker ($X^2=44.42$, d.f=1, $p<0.01$), online horse-race betting ($X^2=20.83$, d.f=1, $p<0.01$), online sports betting ($X^2=51.96$, d.f=1, $p<0.01$), online spread betting ($X^2=16.48$, d.f=1, $p<0.01$) and online betting exchanges ($X^2=15.49$, d.f=1, $p<0.01$) were significantly more likely to be male than female. The regular gamblers who participated in online bingo ($X^2=24.80$, d.f=1, $p<0.01$), and online fruit machines ($X^2=8.14$, d.f=1, $p<0.01$) were significantly more likely to be female than male. There was no significant difference between males

and females for regular and non-regular roulette players ($X^2=0.00$, d.f= 1, $p>0.01$), blackjack players ($X^2=0.09$, d.f=1, $p>0.01$), dog-race betters ($X^2=1.80$, d.f=1, $p>0.01$), football pools players ($X^2=1.12$, d.f=1, $p>0.01$), and instant win players ($X^2=5.45$, d.f=1, $p>0.01$).

The categories 'most days' and '1-4 times a month' were combined to create a new variable of frequent gamblers. This resulted in more sex differences in terms of activities played. The frequent gamblers who participated in online poker ($X^2=44.27$, d.f=1, $p<0.01$), online horse racing ($X^2=22.21$, d.f=1, $p<0.01$), online dog race ($X^2=6.28$, d.f=1, $p<0.01$), online sports betting ($X^2=60.59$, d.f=1, $p<0.01$), online spread betting ($X^2=17.70$, d.f=1, $p<0.01$), and online betting exchanges ($X^2=20.37$, d.f=1, $p<0.01$) were significantly more likely to be male than female. The frequent gamblers who participated in online roulette ($X^2=7.04$, d.f=1, $p<0.01$), online bingo ($X^2=82.55$, d.f=1, $p<0.01$), online fruit machines ($X^2=37.13$, d.f=1, $p<0.01$), online lottery ($X^2=23.17$, d.f=1, $p<0.01$), and online instant win games ($X^2=23.76$, d.f=1, $p<0.01$), were significantly more likely to be female than male. There was no difference between males and females in terms of online blackjack and online football pools.

6.6.15.4 Gender swapping

A Chi-square test of independence was also performed to examine the relation between regular gamblers and non-regular gamblers in terms of gender swapping. For the activities roulette, blackjack, dog-race betting, bingo, fruit machines, football pools, lottery and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's exact test was selected for Pearson's chi-square. Regular poker players were significantly more likely to gender swap than non-regular poker players ($X^2=15.91$, d.f=1, $p<0.01$). There was no significant difference between regular and non regular roulette players ($X^2=0.09$, d.f=1, $p>0.01$), blackjack players ($X^2=0.35$, d.f=1, $p>0.01$), dog-race betters ($X^2=0.01$, d.f=1, $p>0.01$), sports betters ($X^2=2.13$, d.f=1, $p>0.01$), horse-race betters ($X^2=1.10$, d.f=1, $p>0.01$), spread betters ($X^2=0.63$, d.f=1, $p>0.01$), betting exchange users ($X^2=0.99$, d.f=1, $p>0.01$), bingo players ($X^2=0.04$, d.f=1, $p>0.01$), fruit machine players ($X^2=1.20$, d.f=1, $p>0.01$), football pools players ($X^2=1.57$, d.f=1, $p>0.01$), lottery players ($X^2=2.16$, d.f=1, $p>0.01$), and instant win players ($X^2=0.82$, d.f=1, $p>0.01$).

6.6.15.5 Easy games and skill-based games

A Chi-square test of independence was also performed to examine the relation between regular gamblers and non-regular gamblers in terms of preferring easy games, and also in terms of preferring skill-based games, for each of the online gambling activities: poker; blackjack, horse-race betting; dog-race betting; sports betting; spread betting; betting exchanges; bingo; fruit machines; and football pools. For the activities roulette, and instant win games, the analysis showed that one cell had an expected count less than five, so Fisher's exact test was selected for Pearson's chi-square. Those that prefer easy games were significantly more likely to be non-regular online poker players ($X^2=22.91$, d.f=1, $p<0.01$); regular online blackjack players ($X^2=7.89$, d.f=1, $p<0.01$); non-regular online horse-race betters ($X^2=28.56$, d.f=1, $p<0.01$); non-regular online sports betters ($X^2=28.40$, d.f=1, $p<0.01$); non-regular online spread betters ($X^2=12.52$, d.f=1, $p<0.01$); non-regular betting exchange players ($X^2=17.49$, d.f=1, $p<0.01$); regular online bingo players ($X^2=10.96$, d.f=1, $p<0.01$) and regular instant win players ($X^2=7.88$, d.f=1, $p<0.01$). There was no difference between regular and non-regular roulette players ($X^2=0.76$, d.f=1, $p>0.01$), dog-race betters ($X^2=4.01$, d.f=1, $p>0.01$), fruit machine players ($X^2=4.97$, d.f=1, $p>0.01$), or those that do the football pools ($X^2=0.20$, d.f=1, $p>0.01$) or play the lottery ($X^2=5.44$, d.f=1, $p>0.01$).

Those that prefer skill-based games were significantly more likely to be regular poker online players ($X^2=127.41$, d.f=1, $p<0.01$). Those that do not prefer skill based games were more likely to be regular online horse-race betters ($X^2=26.54$, d.f=1, $p<0.01$); regular online spread betters ($X^2=6.20$, d.f=1, $p<0.01$) and regular online bingo players ($X^2=10.03$, d.f=1, $p<0.01$). There was no difference between regular and non-regular sports betters, blackjack players, dog-race betters, betting exchange users, fruit machine players, or those that do the football pools or play the lottery.

6.6.16 Reasons for gambling online among regular and non-regular gamblers

A chi-square test of independence was performed to examine the relation between regular online poker players and non-regular online poker players; regular sports betters and non-regular sports betters, and regular horse-race betters and non-regular horse race betters in terms of reasons for gambling on the internet.

Table 14: Reasons for gambling online, by regular and non regular poker players, sports betters and horse-race betters.

	Regular poker player (n=930) %		X^2	p	Regular sports better (n=930) %		X^2	p	Regular horse race better (n=912) %		X^2	p
	Yes	No			Yes	No			Yes	No		
Convenience	81.00	80.10	0.13	>0.01	91.80	77.40	20.53	<0.01	90.00	79.10	7.26	<0.01
Anonymity	22.70	21.30	0.25	>0.01	28.60	20.00	6.62	<0.01	20.00	22.10	0.24	>0.01
Availability	77.00	47.90	76.00	<0.01	73.50	54.90	22.01	<0.01	57.30	59.00	0.12	>0.01
Access	77.60	60.30	29.30	<0.01	82.10	62.70	26.44	<0.01	73.60	65.90	2.65	>0.01
Comfort	78.40	56.20	47.15	<0.01	72.40	62.40	6.83	<0.01	77.30	62.80	8.87	<0.01
Offline venues too far	37.10	16.50	50.26	<0.01	24.00	24.30	0.01	>0.01	16.40	25.20	4.17	>0.01
Dislike atmosphere in offline venues	8.90	8.40	0.07	>0.01	9.70	8.30	0.38	>0.01	11.80	8.20	1.64	>0.01
High speed of play online	55.70	11.20	215.39	<0.01	15.30	31.20	19.45	<0.01	8.20	30.50	24.02	<0.01
Bet at own pace	37.40	24.60	17.17	<0.01	26.00	30.20	1.33	>0.01	14.50	31.30	13.19	<0.01
Better value	35.10	27.70	5.62	>0.01	43.90	26.80	21.21	<0.01	53.60	27.30	31.74	<0.01
Safer	6.90	4.30	2.95	>0.01	7.10	4.80	1.75	>0.01	4.50	5.40	0.13	>0.01
Advertisements	0.90	2.10	1.98	>0.01	1.00	1.80	0.55	>0.01	0.00	1.80	2.05	>0.01
Bet in play	7.50	18.60	21.70	<0.01	37.20	8.30	105.01	<0.01	46.40	10.10	103.30	<0.01
Variety of games	34.80	13.90	55.70	<0.01	24.00	21.10	0.75	>0.01	13.60	22.80	4.80	>0.01
Greater flexibility in stake size	44.80	12.00	127.37	<0.01	17.30	26.20	6.53	<0.01	15.50	25.50	5.31	>0.01
Spend less online	19.80	13.10	7.58	<0.01	10.70	16.90	4.49	>0.01	7.30	16.70	6.56	<0.01
Multi-gambling	56.60	9.10	250.02	<0.01	15.80	29.80	15.47	<0.01	8.20	29.40	22.20	<0.01
Free practice games	20.10	12.00	11.14	<0.01	6.60	17.30	13.77	<0.01	3.60	16.60	12.72	<0.01
Free bets	30.70	18.20	19.25	<0.01	20.40	23.60	0.89	>0.01	19.10	23.40	1.04	>0.01
To win money	77.00	46.40	83.74	<0.01	65.30	55.90	5.66	>0.01	58.20	57.80	0.01	>0.01
Bored	19.50	25.30	4.01	>0.01	19.40	24.10	1.94	>0.01	10.00	24.90	12.08	<0.01
Enjoyment	67.80	37.30	81.25	<0.01	53.10	47.50	1.88	>0.01	37.30	50.20	6.53	<0.01
Competition	17.50	2.10	72.03	<0.01	3.60	9.00	6.28	<0.01	1.80	8.70	6.27	<0.01
Escape	9.20	7.40	0.96	>0.01	10.20	7.50	1.53	>0.01	8.20	8.00	0.00	>0.01
Influenced by others	1.70	2.20	0.28	>0.01	0.50	2.50	2.92	>0.01	1.80	2.10	0.03	>0.01
Stimulation	29.00	15.60	23.82	<0.01	25.50	19.30	3.59	>0.01	21.80	20.50	0.11	>0.01
Challenge	53.20	21.80	95.85	<0.01	38.30	32.30	2.48	>0.01	28.20	34.30	1.61	>0.01
Other	2.60	5.50	4.38	>0.01	2.00	5.00	3.30	>0.01	3.60	4.50	0.18	>0.01

Compared to non-regular poker players, regular poker players were significantly more likely to use the internet because of the availability ($X^2=76.00$, d.f=1, $p<0.01$), accessibility ($X^2=29.30$, d.f=1, $p<0.01$), comfort ($X^2=47.15$, d.f=1, $p<0.01$), because offline venues are too far ($X^2=50.26$, d.f=1, $p<0.01$), high speed of play ($X^2=215.39$, d.f=1, $p<0.01$), bet at own pace ($X^2=17.17$, d.f=1, $p<0.01$), the variety of games ($X^2=55.70$, d.f=1, $p<0.01$), the greater flexibility in stake size ($X^2=127.37$, d.f=1, $p<0.01$), the ability to spend less online ($X^2=7.58$, d.f=1, $p<0.01$), multi-gambling opportunities ($X^2=250.02$, d.f=1, $p<0.01$), the free practice games ($X^2=11.14$, d.f=1, $p<0.01$), the free bets ($X^2=19.25$, d.f=1, $p<0.01$), to win money ($X^2=83.74$, d.f=1, $p<0.01$), because its enjoyable ($X^2=81.25$, d.f=1, $p<0.01$), for the competition ($X^2=72.03$, d.f=1, $p<0.01$), for the stimulation ($X^2=23.82$, d.f=1, $p<0.01$), and for the challenge ($X^2=95.85$, d.f=1, $p<0.01$), but were significantly less likely to gamble on the internet to bet in-play ($X^2=21.70$, d.f=1, $p<0.01$).

Compared to non-regular sports betters, regular online sports betters were significantly more likely to use the internet for convenience ($X^2=20.53$, d.f=1, $p<0.01$), anonymity ($X^2=6.62$, d.f=1, $p<0.01$), availability ($X^2=22.01$, d.f=1, $p<0.01$), accessibility ($X^2=26.44$, d.f=1, $p<0.01$), comfort ($X^2=6.83$, d.f=1, $p<0.01$), better value for money ($X^2=21.21$, d.f=1, $p<0.01$), and to bet in-play ($X^2=105.01$, d.f=1, $p<0.01$), but were significantly less likely to use the internet for the high speed of play ($X^2=19.45$, d.f=1, $p<0.01$), the greater flexibility in stake size ($X^2=6.53$, d.f=1, $p<0.01$), multi-gambling ($X^2=15.47$, d.f=1, $p<0.01$), the free practice games ($X^2=13.77$, d.f=1, $p<0.01$), and the competition ($X^2=6.28$, d.f=1, $p<0.01$).

Compared to non-regular horse-race betters, regular horse race betters were significantly more likely to use the internet to gamble for the convenience ($X^2=7.26$, d.f=1, $p<0.01$), comfort ($X^2=8.87$, d.f=1, $p<0.01$), better value for money ($X^2=31.74$, d.f=1, $p<0.01$), and to bet in-play ($X^2=103.30$, d.f=1, $p<0.01$), but were significantly less likely to use the internet for the high speed of play ($X^2=24.02$, d.f=1, $p<0.01$), bet at own pace ($X^2=13.19$, d.f=1, $p<0.01$), to spend less online ($X^2=6.56$, d.f=1, $p<0.01$), multi-gambling opportunities ($X^2=22.20$, d.f=1, $p<0.01$), free practice games ($X^2=12.72$, d.f=1, $p<0.01$), boredom ($X^2=12.08$, d.f=1, $p<0.01$), enjoyment ($X^2=6.53$, d.f=1, $p<0.01$), and competition ($X^2=6.27$, d.f=1, $p<0.01$).

6.6.17 Attitudes towards gambling among regular and non-regular gamblers

A t-test was also carried out on each of the attitude statements to see whether there was a difference between regularity of poker playing and attitude, regular sports betting and attitude, and regular horse race betting and attitude.

Table 15: Attitudes, by regular and non-regular poker players, sports betters, and horse-race betters

	Regular poker (n=838) mean score		<i>t</i>	d.f	<i>p</i>	Regular sports better (n=838) Mean score		<i>t</i>	d.f	<i>p</i>	Regular horse race better (n=838)		<i>t</i>	d.f	<i>p</i>
	Yes	No				Yes	No				Yes	No			
1)	2.48	2.55	-0.97	836	>0.01	2.70	2.48	2.98	836	<0.01	2.78	2.49	3.07	836	<0.01
2)	2.68	2.29	5.28	597.30	<0.01	2.40	2.45	-0.66	836	>0.01	2.63	2.41	2.01	836	>0.01
3)	2.83	2.54	4.36	836	<0.01	2.82	2.61	2.80	283.68	<0.01	2.99	2.61	4.21	133.80	<0.01
4)	2.61	3.07	-6.17	836	<0.01	3.26	2.80	5.02	836	<0.01	3.50	2.81	6.15	836	<0.01
5)	3.64	3.59	0.67	836	>0.01	3.79	3.56	2.55	836	<0.01	3.85	3.58	2.62	132.97	<0.01
6)	2.27	2.68	-7.04	746.53	<0.01	2.41	2.55	-1.97	836	>0.01	2.39	2.54	-1.88	141.34	>0.01
7)	1.57	1.90	-6.01	681.29	<0.01	1.72	1.79	-1.14	836	>0.01	1.96	1.75	2.50	128.55	<0.01
8)	2.96	2.72	3.17	836	<0.01	3.00	2.76	2.61	836	<0.01	3.07	2.78	2.6	836	<0.01
9)	3.11	2.65	6.80	836	<0.01	2.99	2.78	2.94	327.13	<0.01	3.19	2.77	4.36	134.60	<0.01
10)	3.24	2.92	4.51	625.89	<0.01	3.25	2.99	3.15	836	<0.01	3.24	3.01	2.17	836	>0.01
11)	1.62	3.08	-22.42	806.97	<0.01	3.09	2.38	7.04	825	<0.01	3.11	2.45	5.18	825	<0.01
12)	1.30	2.47	-20.71	824.38	<0.01	2.21	1.98	2.58	825	<0.01	2.55	1.95	5.46	825	<0.01
13)	2.55	2.56	-0.20	825	>0.01	2.70	2.52	2.33	825	>0.01	2.85	2.52	3.33	825	<0.01
14)	2.62	2.66	-0.60	825	>0.01	2.75	2.62	1.38	825	>0.01	2.88	2.62	2.34	825	>0.01
15)	2.89	2.57	4.20	825	<0.01	2.61	2.71	-1.14	825	>0.01	2.43	2.73	-2.65	825	<0.01
16)	2.29	2.43	-1.94	825	>0.01	2.24	2.41	-2.01	825	>0.01	2.47	2.36	0.97	825	>0.01
17)	2.13	2.00	2.12	621.20	>0.01	2.02	2.06	-0.57	825	>0.01	1.93	2.07	-1.58	825	>0.01
18)	2.95	3.16	-2.27	591.64	>0.01	3.32	3.02	2.72	825	<0.01	3.52	3.02	3.63	825	<0.01

Eleven of the 18 attitude statements were found to be significantly different between regular poker players and non-regular poker players. Compared to non-regular poker players, regular poker players were significantly more likely to agree with statements 4, 6, 7, 11, and 12, while compared to regular poker players, non-regular poker players were significantly more likely to agree with statements 2, 3, 8, 9, 10, and 15.

Ten of the 18 attitude statements were found to be significantly different between regular poker players and non-regular poker players. Non-regular sports betters were more likely to agree with statements 1, 3, 4, 5, 8, 9, 10, 11, 12, and 18 compared to regular sports betters.

Twelve of the 18 attitude statements were found to be significantly different between regular poker players and non-regular poker players. Non-regular horse-race betters were significantly more likely to agree with statements 1, 3, 4, 5, 7, 8, 9, 11, 12, 13, 15, and 18. Regular horse race betters were significantly more likely to disagree with statement 5 and agree with statement 15.

6.6.18 Other remote forms of gambling

As this was an online survey targeted at those that gamble online, all participants used the internet to gamble. However, only 9.9% reported using a mobile phone to gamble, and only 2.1% reported gambling through interactive television.

6.6.19 Drinking alcohol and smoking

A total of 22.4% of participants reported drinking alcohol, while gambling on the internet. A chi-square test of independence was performed to examine the relation between problem gambling and whether or not they drink alcohol while gambling online. The relation between these variables was significant, ($X^2=6.13$, $d.f=1$, $p<0.01$). Problem gamblers were significantly more likely than non-problem gamblers to drink alcohol while gambling on the internet. A total of 37.8% of participants reported smoking (18.7% smoking daily). A Chi-square test of independence was performed to examine the relation between problem gambling and smoking. There was a significant difference between these variables, ($X^2=6.40$, $d.f=1$, $p<0.01$). Problem gamblers were more likely to smoke than non-problem gamblers. There was no difference between age and smoking ($X^2=1.19$, $d.f=1$, $p>0.01$), or sex and smoking ($X^2=3.63$, $d.f=1$, $p>0.01$). However, those that smoked were significantly more likely to indicate that the smoking

ban had caused them to gamble more often on the internet than those that do not smoke ($X^2=60.25$, d.f=1, $p>0.01$).

6.6.20 Treatment

In terms of treatment that problem gamblers had sought, the most frequently cited source of help was ‘someone else’ (n= 561, 71.2%) but there was no option on the survey to say who this someone else was. Seeking help from family was the next most cited source of help (n=38, 5.2%) and 13.8% said that they had no help. A total of 86% indicated that they had sought some sort of help for their gambling problem.

Table 16: Seeking help for a gambling problem (n=726)

Type of help	Number
Someone else	561 (77.3%)
No help	109 (15%)
Family	38 (5.2%)
GA	25 (3.4%)
Online help	13 (1.8%)
GamCare	9 (1.2%)
GP	8 (1.1%)
Another addiction service	7 (1.0%)
Social Worker	4 (0.6%)
Probation officer	3 (0.4%)
Religious Leader	3 (0.4%)
Residential Treatment	3 (0.4%)
Debt counsellor	3 (0.4%)
Employer	2 (0.3%)

The relation between sex and seeking help for a gambling problem was also examined. There were no significant differences for any of the options of help between males and females. Participants were also asked whether they know someone with a gambling problem. Almost half of the participants (n=417, 46.1%) reported that they don’t know anyone with a gambling problem, and 31.4% reported that a friend has a gambling problem.

Table 17: Knowing someone else with a gambling problem among problem gamblers and non-problem gamblers (n=796, d.f=1).

	Problem gambler (n=796)		X^2	p	Total sample (n=796) %
	Yes %	No %			
No one	40.9	60.9	31.01	<0.01	52.4
Friend	44.2	29.5	18.21	<0.01	35.7
Partner	1.5	0.4	2.50	>0.01	0.9
Parent	2.4	2.4	0.00	>0.01	2.4

Other relative	13.4	7.4	7.96	<0.01	9.9
Child	0.6	0.2	0.75	>0.01	0.4
Work colleague	9.6	6.9	1.79	>0.01	8.0
Other	4.3	3.3	0.58	>0.01	3.9

A Chi square test of independence was performed to examine the relation between sex and whether they know someone with a gambling problem. No significant differences were found between males and females. No significant differences were found between those younger than 35 and those 35 or older in terms of knowing someone with a gambling problem. However, there were significant differences between problem gamblers and non-problem gamblers as to whether they know anyone with a gambling problem. Compared to non-problem gamblers, problem gamblers were significantly more likely to indicate they had a friend with a gambling problem ($X^2=18.21$, d.f=1, $p<0.01$), or a relative with a gambling problem ($X^2=7.96$, d.f=1, $p<0.01$). Compared to problem gamblers, non-problem gamblers were significantly more likely to indicate that they didn't know anyone with a gambling problem ($X^2=31.01$, d.f=1, $p<0.01$).

6.6.21 Characteristics of online problem gamblers: Binary Logistic Regression

The Chi square test of independence performed suggested that problem gamblers were more likely to be male, be older than 35 years, have a disability, have been gambling online or offline for more than nine years, gamble for four or more hours per session, chase losses, continue gambling after experiencing a near miss, smoke, drink alcohol while gambling on the internet, gamble alone, lie about their age, use the autoplay features, engage in two or more activities regularly, think that internet gambling is more addictive, and to be regular online horse-race betters, online sports betters, online spread betting users, and online fruit machine players.

Because the previous analyses were bivariate, the aim was to assess whether when assessed together they could still predict variability in the dependent variable whilst controlling for other independent variables. As a result a binary logistic regression analysis was performed with problem gambling status as the dependent variable and sex; age; smoking; disability; number of years gambling; lying about age; gambling alone; length of online gambling session; using autoplay features; engaging in two or more activities most days; drinking alcohol while gambling on the internet; continued gambling after experiencing a near miss; and believing that internet gambling is more addictive than offline gambling, as the predictor variables. Chasing behaviour was not included in the regression analysis as this was felt to be a consequence of the problem

gambling rather than a predictor, as recognised by the DSM-IV (APA, 1994).

A total of 778 cases were analysed and the full model significantly predicted problem gambling status (omnibus Chi-square = 140.90, d.f=13, $p < 0.0005$). The model accounted for between 16.6% and 22.4% of the variance in problem gambling status, with 77.7% of the non-problem gamblers successfully predicted. Overall 67.5% of predictions were accurate. Table 18 gives coefficients and the Wald statistic and associated degrees of freedom and probability values for each of the predictor variables.

Table 18: Predictors of problem online gambling behaviour

Predictor	B	S.E	Wald χ^2	P	Odds ratio (OR)	99% Confidence Interval (CI)
Sex: male	0.80	0.23	21.49	0.00	2.22	1.24-3.97
Age: <35	-0.27	0.20	1.90	0.17	0.76	0.46-1.26
Gamble alone (yes)	0.60	0.27	4.80	0.03	1.83	0.90-3.70
Lie about age (yes)	1.16	0.36	10.31	0.00	3.20	1.26-8.12
Disability (yes)	0.63	0.25	6.60	0.01	1.88	1.00-3.56
9+ years gambling (yes)	-0.10	0.20	0.24	0.62	0.91	0.54-1.52
Gambling more than 4 hours (yes)	0.24	0.22	1.17	0.28	1.27	0.72-2.25
Using autoplay features (yes)	0.76	0.39	3.94	0.05	2.15	0.80-5.80
Playing 2 or more activities regularly (yes)	0.70	0.20	12.30	0.00	2.01	1.20-3.37
Agreeing online gambling is more addictive (yes)	0.83	0.16	25.52	0.00	2.29	1.50-3.49
Affected by near miss (yes)	0.86	0.17	26.10	0.00	2.36	1.53-3.63
Smoking (yes)	-0.41	0.17	5.81	0.02	0.67	0.43-1.03
Drinking alcohol while gambling online (yes)	0.41	0.19	4.56	0.03	1.51	0.92-2.46

This shows that sex, lying about age, disability, engaging in two or more activities regularly, believing that internet gambling was more addictive than offline gambling, and gambling after a near miss, was reliably associated with problem gambling. Being male increased your odds of being a problem gambler by 2.2 compared to females (99% CI=1.24-3.97). Those with a disability had 1.9 times the odds of being a problem gambler compared to those without a disability (OR=1.88; 99% CI=1.00-3.56). A gambler is 2.3 times more likely to be a problem gambler if they agree with the

statement that online gambling is more addictive than offline gambling, compared to a gambler who does not agree with the statement (99% CI 1.50 and 3.49). A gambler is 2.4 times more likely to be a problem gambler if they gamble after experiencing a near miss, compared to a gambler who does not gamble after experiencing a near miss (99% CI 1.53 and 3.63). Those that play two or more activities regularly were twice as likely to be a problem gambler than those that play one or fewer activities regularly (99% CI 1.20 and 3.37). Lying about age was the strongest predictor of being a problem gambler (OR=3.2; 99% CI=1.26-8.12).

6.7 Discussion

6.7.1 Demographics

This study found that the majority of internet gamblers were male (79.8%) supporting previous research (Gambling Commission 2010; Griffiths, Wardle, Orford, Sproston & Erens, 2009; Wood & Williams, 2009). However, a comparison with general prevalence data is difficult due to the 'global access' to many internet sites. Lloyd *et al.* (2010) conducted an international online survey on the behaviours and health experiences of people who gamble on the internet and found 79.1% of the sample were male. Furthermore, males were significantly more likely to be a problem gambler than females, supporting previous research (e.g., Griffiths & Barnes, 2008; Wood, Williams & Lawton, 2007).

It was hypothesised there might be a shift towards more females gambling online as it is viewed as safer and less intimidating than offline venues, however the results do not support this contention as only 17.9% of the total sample were female. However, there may be an emerging trend, as females were significantly more likely to first gamble on the internet at a younger age than males. This is contradictory to the research for offline gambling which would suggest that women appear to start gambling later in life compared to men (Hing & Breen, 2001; Ladd & Petry, 2002a; Potenza *et al.*, 2001; Tavares, Zilberman, Beites & Gentil, 2001). However these research studies were carried out when internet gambling was in its infancy. It would seem that an increased number of females are gambling on the internet (EmaxHealth, 2010; Zacharias, 2010), and this is likely to be the younger generation because gambling is now more socially acceptable and has become normalised (Abbott, Volberg & Ronnberg, 2004). Furthermore the younger generation has grown up in a technological world and is much more computer savvy. Older females may still associate gambling as a male dominated pastime and therefore may be less likely to gamble online than younger females.

However, there is a push to increase older females to the internet and the potentially large female market has been recognised by the gambling industry. Many gambling advertisements on UK television specifically focus on bingo and on encouraging older women to gamble online (Corney & Davis, 2010). The results found that females were more likely to choose a gambling website because of an advertisement than males. However, it could be because males may be less likely to admit being led by an advertisement.

Previous research has found that most subscribers who gamble on the internet do so moderately (LaBrie, LaPlante, Nelson, Schuman & Shaffer, 2007; LaBrie *et al.*, 2008; LaPlante, Kleschinsky, LaBrie, Nelson & Shaffer, 2009), but the prevalence of problem gambling is thought to be 3 to 4 times higher in internet gamblers compared to non-internet gamblers (Wood & Williams, 2009). Previous research has been inconclusive on the link between online gambling behaviours and age. In this study, as the mean age of participants was 34.7 years old, a dichotomous variable was created with those 34 years old or younger in one category and those older than 35 years old in another category. However, there was no significant difference between age and problem gambling status, suggesting that internet gambling may be problematic for people of all age groups. Although there is evidence to suggest that those who gambling in childhood are more likely to become a problem gambler later in life (Griffiths, 1995; Gupta & Derevensky, 1997), in this survey there was no relationship between the age at which someone started gambling online and problem gambling. This could be due to only 8.1% indicating that they first started gambling online younger than 18 years old.

6.7.2 Disability

Previous research found a relationship between problem gambling and disability with higher rates of problem gambling among individuals receiving disability services (Morasco & Petry, 2006; Southwell *et al.*, 2008; Wood & Williams, 2007b). The results of this study concur; those with a disability were significantly more likely to be a problem gambler than those without a disclosed disability. However, the participants in this study, and in the previous studies cited, did not disclose what disability they had, whether it was physical, sensory, cognitive or intellectual impairment. It could be the case that, the convenience and ease of access of internet gambling are likely to appeal to those who have a physical disability (Wood, Williams & Lawton 2007), but those with a learning disability for example, may be attracted by different features. There is clearly

a need for further research examining the relationship between problem gambling and types of disability.

Disability itself is related to poor physical and emotional health (Ormel *et al.*, 1994; Steele *et al.*, 2004); and research also suggests that problem gambling is associated with decreased health functioning (Bergh & Kuhlhorn, 1994; Morasco, vom Eigen & Petry, 2006; Pasternak & Fleming, 1999). Therefore disabled individuals with a gambling problem may suffer additional physical and psychological problems, thus indicating the importance for health professionals in assessing problem gambling among individuals with disability (Morasco & Petry, 2006).

6.7.3 Motivations for gambling online

The most popular reasons for gambling on the internet were convenience, accessibility, comfort, availability, the chance to win money, enjoyment, for the challenge and better value for money (in line with the findings from Chapter 5). These findings were consistent with prior research. Female internet gamblers rated accessibility as an important factor in determining either their take-up of gambling or their degree of use (Corney & Davis, 2010). Among university students in the UK, the primary reasons given for gambling online were: ease of access (84%), flexibility of use (75%), 24 hour availability (66%), because friends do (67%), large gambling choice (57%), advertising (40%), anonymity (25%), demo games (21%), and because family members did (14%) (Griffiths & Barnes, 2008). A quarter (25.3%) of the sample in this study were students.

Student status has also been found to be a predictor of internet gambling behaviour among Canadians (Wood & Williams, 2009), suggesting that specific treatment/interventions may need to be developed targeting students. The 24 hour availability and convenience of internet gambling was found to be the main motivation among 12,521 internet gamblers in an international online survey (Wood & Williams, 2009). In terms of choosing a gambling website, the main things that influenced which site to use were the brand name, the free offers on the website, the graphics, the ease of use, and whether their friends use it. These findings were again in line with previous research. Wood and Williams (2009) found internet gamblers were attracted to: the general reputation of the site; recommendation from friends; better game experience/interface; monetary deposits being safe and wins paid out in timely fashion.

Boredom is believed to be a predisposing factor in the development and maintenance of problem gambling (Blaszczynski, McConaghy & Frankova, 1990; Bonnaire, Lejoyeux & Dardennes, 2004; Mercer & Eastwood, 2010; Nower & Blaszczynski, 2006; Turner, Zangeneh & Littman-Sharp, 2006). However, the relationship between boredom and gambling problems has not been well explored. One view was boredom motivated individuals to engage in gambling activities in order to increase arousal (Anderson & Brown, 1984; Brown, 1986; Mercer & Eastwood, 2010; Zuckerman, 1983). Conversely, the other view is problem gamblers gamble as a means of relieving or avoiding unpleasant emotional states like boredom, depression or loneliness (Blaszczynski *et al.*, 1986; Jacobs, 1986; Lesieur & Blume, 1987; Taber, McCormick & Ramirez, 1987). In this study females were significantly more likely to gamble due to boredom compared to males. Additionally, once engaged in gambling, they were significantly more likely to end a gambling session because they were bored compared to males. Their gambling sessions were generally much shorter than males suggesting that they became bored of the gambling quickly and ended the session. It may be that females experiencing boredom are looking for a quick fix to increase arousal and turn to internet gambling because it is readily available and convenient but they soon experience boredom again causing them to end the gambling session and perhaps find something else to do. This supports the view that individuals engage in gambling activities in order to increase arousal. Brown & Coventry (1997) also found that boredom was one of the main motivations for gambling among women with gambling problems. An area for increased research would be to examine whether problem gamblers are more likely to gamble as a means of relieving or avoiding unpleasant emotional states, while non-problem gamblers are more likely to gamble in order to increase arousal.

6.7.4 Emotional play

Emotional play has been associated with problem gambling and can affect ability to play rationally. Data from Chapter 5 found that many problem gamblers reported that gambling is like an emotional ‘rollercoaster ride’ as they experience extreme highs and lows (Nixon, Solowoniuk, Hagen & Williams, 2005). The results from this survey also found problem gamblers are much more likely to experience a range of emotions and extreme highs and lows compared to non-problem gamblers. Furthermore, non-problem gamblers were much more likely to report feeling ‘no different’ when gambling online compared to problem gamblers. The only difference between males and females in terms of emotions experienced, was that males were more likely to experience anger compared to females.

6.7.5 Disadvantages of gambling online

In this survey, the most frequently cited disadvantage of online gambling was being worried about fraud; followed by being worried that the bets might be rigged; a lack of atmosphere; and not wanting to give out personal information. Additionally 22.5% reported that there are no disadvantages to online gambling. Some disadvantages of online gambling reported by internet gamblers include difficulty verifying fairness of games; worry about monetary deposits being safe; lack of face-to-face contact; tendency to spend more money online; too convenient; illegality; lack of atmosphere; and poorer game experience (Wood & Williams, 2009). It seems that these concerns are unique to online gambling.

Those that think a disadvantage of online gambling is that it was not as real as offline gambling were significantly more likely to gamble online out of boredom, than those that do not think this is a disadvantage. No other significant differences were found between the other reasons for gambling online. It is likely that these gamblers enjoy gambling in the offline venues but may well gamble at home out of boredom in order to increase arousal but actually prefer gambling offline.

6.7.6 Skill versus chance games

This survey included an attitude question assessing whether participants prefer skill games or games of chance (e.g., 'I prefer online games with some element of skill'; 'I prefer online games that are easy to learn'). There were no significant differences between males and females in terms of preferring skill based games. However, females were significantly more likely to indicate preferring games of chance. In terms of the activities that males and females participated in, regular gamblers (i.e., those who participate 'most days') who participated in online poker, online horse-race betting, online sports betting, online spread betting and online betting exchanges were significantly more likely to be male than female. When the categories 'most days' and '1 to 4 times a month' were combined, frequent gamblers who participated in online poker, online horse race betting, online dog race betting, online sports betting, online spread betting and online betting exchanges were significantly more likely to be male than female, while frequent gamblers who participated in online roulette, online bingo, online fruit machines, online lottery and online instant win games were significantly more likely to be female than male. Thus these results support previous findings as sex biases between games of chance and games of skill have been found in the past, with

males more likely to prefer games of skill, such as casino gambling and race betting, and females are more likely to prefer games of chance such as electronic gaming machines and bingo (Griffiths & Delfabbro, 2002; Hing & Breen, 2001; LaPlante *et al.*, 2006; Petry, 2003; Wood & Williams, 2009). Women may have different motivations for gambling thus accounting for the differences in choice of game (Young & Stevens, 2009).

6.7.7 Number of gambling activities

There is some research to suggest that once an individual with problem gambling engages in a particular gambling activity, they tend to be specific in their gambling activity rather than play a wide variety of games (Grant & Kim 2001; Teo *et al.*, 2007). However, the results of this study suggest that problem gamblers are more likely to engage in two or more activities regularly than non-problem gamblers. This may be because internet gamblers can easily access a wide range of gambling activities, whereas offline problem gamblers may only have access to a particular gambling activity at any one time. Furthermore, a recent study of internet gambling behaviour (Wood & Williams, 2009) also found that problem internet gamblers were significantly more likely to gamble on a greater number of gambling activities than non-problem internet gamblers. Interestingly those that play poker regularly were significantly more likely to just focus on poker than non-regular poker players. Perhaps it might be the case that offline problem gamblers are more likely to participate in only one activity, whereas online problem gamblers will participate in two or more because it is a lot easier to do so online. This will have implications in terms of a potential rise in the number of problem online gamblers, as it will become harder to regulate gambling behaviour and can easily allow problem online gamblers to disguise the number of activities they are engaging in and their problem behaviour.

6.7.8 Attitudes

Of the 18 attitude statements included in the survey, 16 were found to be significantly different between males and females. These reflect differences in opinions on responsible gambling features, structural characteristics of online gambling websites, and attitudes towards online gambling. Females were more likely to have negative opinions towards online gambling as they were significantly more likely to agree with the statements: 'it is easy for children to gamble on the internet'; and 'internet gambling is more addictive than offline gambling' than males. Data from the 2007 British Gambling prevalence survey (Orford *et al.*, 2009) also found differences between

gambling attitudes and sex in that females had more negative attitudes towards gambling. With increasing liberalisation and normalisation of gambling, it might be anticipated that the attitudes of women and of older people will become more positive over time (Orford *et al.*, 2009).

The negative attitudes adopted by the problem gamblers (the fact that they were significantly more likely to think internet gambling was more addictive than offline gambling) may reflect the fact an additional factor comes into play, namely a negative reaction against gambling which is recognised as being the cause of their problems. A similar finding was found by Orford *et al.* (2009) in the British Gambling Prevalence Survey, in which the most positive attitudes towards gambling were adopted by those identified as 'at-risk' while problem gamblers appeared to have negative attitudes towards gambling. Furthermore, Wood and Williams, (2009) found having negative attitudes towards gambling was a significant predictor of whether someone was an internet problem gambler, however, having positive attitudes towards gambling was associated with non-problem internet gamblers.

Additionally, problem gamblers were significantly more likely to agree that the dangers of gambling should be advertised, while non-problem gamblers were significantly more likely to agree gambling advertisements have no impact on gambling behaviour. Binde (2009) also found that the more severe the gambling problems, the more likely there will be a self-perceived negative impact of gambling advertising.

6.7.9 Underage gambling

A total of 6.8% (n=59) participants reported lying about their age online and the majority indicated that this was because they were underage at the time of gambling. Underage gambling is a particular concern considering the anonymity the internet provides and that teenagers commonly access the free play sections of online gambling websites (Derevensky & Gupta, 2007; Messerlian, Byrne, & Derevensky, 2004; Mitka, 2001). Wood and Williams (2009) reported that several studies have found that underage teenagers have been able to place bets on internet gambling websites. In the UK, the Gambling Commission reported that a third of all online casinos and bookmakers had deficiencies that could enable underage children to place bets (Drury, 2009). In this survey, overall, participants agreed with the statement 'it is easy for children to gamble online'. Furthermore, those participants that indicated lying about their age online were significantly more likely to be a problem gambler than those that

did not lie about their age online. The very people the law is trying to protect from developing a gambling problem are actually experiencing gambling related problems through being able to access online gambling websites. It seems clear that underage online gambling is a problem, although the enormity of this issue is uncertain.

6.7.10 Multi game playing

It has been speculated that multi-gambling opportunities provided online may be more problematic for potential vulnerable players and may lead to problem gambling behaviour (Griffiths, 2003b). The results from this online survey did not concur. There was no difference between problem gamblers and non-problem gamblers in terms of gambling online for the ability to play multiple games. Younger people were more likely to engage in multi-gambling opportunities than older people, as those under 35 were significantly more likely to than those 35 years or older; additionally, those that first gambled online under the age of 24 were significantly more likely to gamble online for the multi-gambling opportunities than those that first gambled online over the age of 25.

Regular poker players were also much more likely to gamble online for the multi-gambling opportunities than non-regular poker players. Griffiths, Parke, Wood and Rigbye (2009) found that regular poker players enjoy the ability to engage in multi-table poker games when gambling online. Regular poker-players were also significantly less likely to be a problem gambler compared to non-regular poker players (while regular sports betters; horse-race betters; spread betters and betting exchange users were significantly more likely to be a problem gambler than their non-regular counterparts). One study by Currie, Hodgins, Wang, el-Guebaly, Wynne and Chen, (2006) found that people gambling frequently (i.e., exceeding 2 to 3 days per month) were thirteen times more likely to experience gambling-related harm compared to individuals who stay below this limit, thus supporting the finding here that regular gamblers (except regular poker players) are more likely to be problem gamblers than non-regular players. Multi-gambling opportunities may be more attractive to those participating in particular gambling activities and to younger players, rather than problem gamblers. However, there is clearly a need for further research into the effect multi-gambling opportunities provided by the internet may be having.

6.7.11 Treatment

Of those that answered the question, a total of 86% indicated that they had sought some sort of help for their gambling problem. This seems like a relatively high percentage of people, considering research has shown only a small percentage of problem gamblers actually seek treatment (Petry & Armentano, 1999; South Australian Department of Human Services, 2001; Volberg, 1999). Chapter 5 also identified that almost half (47%) of the problem gamblers had sought some sort of treatment for their gambling problem. The help sought included self-help groups, e.g., GA; residential therapy, and/or counselling. As the survey was a self-selected sample, perhaps participants who had already sought help would be more proactive and likely to take part in the survey than people who had not sought help. Taking part in the research may be part of the process of recovery and could be seen as a therapeutic opportunity to express themselves (as was the case for some participants in Chapter 5).

Chapter 5 also highlighted, the main barrier preventing treatment seeking among problem gamblers was the perception that treatment does not work. Further research is needed to determine what the barriers are to seeking help for a gambling problem as this information could be useful in encouraging other problem gamblers to seek help. The online survey also did not go into detail on why participants had sought help, how long they had sought treatment for or whether it had worked. Further research is also needed to understand what the principal motivations for seeking treatment are among problem gamblers.

6.7.12 Limitations

It is important to acknowledge some of the limitations of the study. The final survey that was posted on the gambling forums contained two questions directly related to attitudes towards internet gambling ('Internet gambling is safe'; 'internet gambling is more addictive than offline gambling') and one question related to gambling in general; ('the potential dangers of gambling should be advertised'). It would have been interesting to include more attitude questions in order to assess attitudes towards gambling among internet players. However, only the most pertinent attitude questions were included in the survey because if too many attitude questions were included then there was the possibility of forum moderators not agreeing with the survey items (because of the negative connotation towards gambling) and therefore not agreeing to post the survey on the website. It was felt that questions with a negative connotation towards gambling might look unfavourable and consequently the moderators might

decline to post it on their website. Additionally, although the sample was large and diverse, the participants were self-selected so the data may be more reflective of the respondents in particular rather than internet gamblers in general. Unfortunately this is one of the downsides of research into internet gambling (Wood, Williams & Lawton, 2007). However, there is some evidence that data collected online is often a more truthful medium of communication than face-to-face conversations (Walther, 1996; Wood & Griffiths, 2007b).

Some participants commented on the forums where the survey was placed. The poker forums seemed to generate a lot of response and there was a strong feeling that poker players do not like to be classed as gamblers in the same genre as roulette players or lotteries. Many reported that there should be a separate survey for poker players, or that questions should distinguish between recreational players and those making a living from gambling. However, it was not possible to evaluate the feedback on the forums but these are some possible considerations for future research. Poker players may identify themselves differently which sets them apart from other gamblers in terms of their behaviour. They see poker as a game of skill which is different to other gambling activities. Therefore, problem poker players may have different needs regarding treatment, and there may be barriers towards accessing treatment if they believe poker is a game of skill and calculations. Perhaps poker is seen as a more respected form of gambling? But this might only be among poker players. There is clearly a need for further research on poker players. One further difficulty is the correlational nature of the data makes it impossible to determine if internet gambling is more addictive or whether problem gamblers are using the internet as a convenient medium in which to engage in their problem behaviour. Nonetheless there are certain aspects of the internet which can make it a risk factor for gambling problems (i.e., the structural and situational characteristics such as convenience, availability, anonymity, event frequency, free practice games, payment, continuity of play, etc.) (Griffiths, 2003b). In order to fully understand the relationship between internet gambling and problem gambling, further research on the issues mentioned above is needed in order to develop measures to reduce the harm posed by internet gambling.

6.8 Conclusions

Internet gamblers are still more likely to be male, but it would seem that a change in attitudes, media portrayal of gambling and advertising are leading to an increase in the numbers of females gambling, particularly younger females, as the females were more

likely to be younger than the males in this survey. The main reasons people were choosing to gamble online are for the convenience, accessibility, comfort, availability, the chance to win money, enjoyment, for the challenge and better value for money. There were significant differences in terms of reasons for gambling online between males and females. Females were more likely to gamble online out of boredom, to practice for free, to spend less gambling online, or because they were influenced by gambling advertisements.

The online activity most frequently participated in was poker, followed by sports betting, horse racing, using betting exchanges and spread betting. Offline gambling was participated in much less frequently. When choosing a gambling website participants were more interested in the brand name, the offers available, the graphics, the ease of use and whether their friends use it. Males were more likely to participate in poker, horse race betting, dog race betting, sports betting, spread betting and betting exchanges, while female online gamblers were more likely to participate in roulette, bingo, fruit machines, lottery and instant win games, and indicated a preference towards playing games of chance. The results of this study suggest that males, those who have a disability, smokers, those who engage in two or more gambling activities regularly, lying about age online, gambling after a near miss, and having a negative attitude towards online gambling are significantly more likely to be an online problem gambler.

Chapter 7: Conclusion

There is a relative lack of research investigating internet gambling and the impact it can have psychologically and socially on people's lives. Online gambling is one of the fastest growing forms of gambling (Griffiths & Parke, 2004), and the internet gambling or online casino business is currently the fastest growing business in the world (Start Casino, 2010). As there are approximately 2,300 gambling websites (Online Casino City, 2010) there is an urgency for research examining what impact the design of these websites is having on gambling behaviour and participation rates. Recent prevalence figures reveal that 9.3% of adults surveyed in the U.K reported participating in online gambling in the past month (Gambling Commission, 2008). The majority of research indicates a global trend of increasing prevalence of internet gambling participation, with growth rates of 10-20% predicted annually (Monaghan, 2009). Early research has indicated that problem gambling rates may be much higher online compared to offline gambling (Griffiths, Wardle, Orford, Sproston & Erens, 2009; Ladd & Petry 2002b).

The aim of the research presented in this thesis was to develop an understanding of internet gambling, particularly in terms of the psychological implications of the design of gambling websites, and also the motivations and inhibiting factors for gambling online and an overview of the demographics of internet gamblers. This thesis essentially aimed to explore internet gambling using a mixed methods approach, incorporating a large scale scoping study, in-depth interviews with internet gamblers, offline gamblers and non-gamblers (ranging from non-problem to problem gamblers), and a comprehensive online survey attracting participants world wide, to uncover online gambling behaviour. This conclusion will draw together the key findings and their implications for understanding online gambling behaviour.

One of the main themes arising from the current research was the impact particular structural and situational characteristics of internet gambling can have on internet gambling acquisition and maintenance. Identifying and understanding the role of structural and situational characteristics of internet gambling has implications in understanding what makes internet gambling potentially addictive, and can lead to measures to reduce the potential problematic features of the design of gambling websites to protect potentially vulnerable players, while still keeping the sites enjoyable for the vast majority of gamblers who are able to engage in controlled gambling

behaviour. For example, Chapters 4, 5 and 6 found that factors relating to payment can have an impact on problem gambling behaviour on the internet. The use of electronic money can lead gamblers to spend more money gambling online than they otherwise would have done offline. It can also lead gamblers to spend more money gambling online a lot quicker. Chapter 6 found that problem gamblers were significantly more likely to indicate spending more money gambling online than they would offline compared to non-problem gamblers. An option for future research and policy initiatives may be to focus on regulating factors relating to payment. In terms of offline gambling, these findings suggest that it might be more socially responsible for gaming operators to allow players to gamble with real money rather than making them convert it to chips, tokens or credits (Lapuz & Griffiths, 2010). However, in situations where it is impossible to gamble with real money (e.g. internet gambling) the online gambling websites should clearly display the financial value of the available credit, as well as display clearly the amount won or lost after each play, so players can see clearly how much credit they have available and make them more aware of how much they are spending., i.e., ensuring websites clearly display time and money spent online and enforcing deposit limits. Other characteristics identified with the acquisition of online gambling, found in Chapters 4, 5 and 6, were *free practice games, bonus features/free offers, availability, convenience* and *anonymity*. Other characteristics associated with online gambling maintenance include *event frequency, continuity of play* and *autoplay features*. However, it is important to note that the structural and situational characteristics of online gambling are to some extent individually specific, affecting some individuals but not others. Individual features will impact on how each characteristic affects player behaviour, i.e., it will depend upon the ‘psycho-structural interaction’ (Griffiths, 1999a).

Indeed, internet gambling is providing convenience gambling through the 24/7 availability and the easy accessibility. Chapter 5 and 6 found that convenience was rated as the greatest motivation for gambling online. Increased availability of gambling opportunities has been found to be related to an increase in problem gambling (Abbott, Williams & Volberg, 2004). In Australia, a negative relationship between the number of electronic gaming machines in a particular area and the rates of problem gambling have been consistently identified (Marshall, 1998; Marshall 2005; Marshall & Baker 2001a; 2001b; Marshall & Baker, 2002). In one study conducted in Australia, Marshall (2005) concludes that there was a significant difference between regions in the extent to which people gamble and this difference appeared to be due to the spatial accessibility to

gambling. In regions where there was a greater availability of gambling, there were greater numbers of individuals gambling. Marshall's work would suggest that what is more important in terms of rates of problem gambling is the accessibility and availability of gambling activities. In 2010, 82.5% of the UK population had used the internet (Internet World Stats, 2010), while 60% of UK adults accessed the internet everyday (Office for National Statistics, 2010). This could have implications in terms of increasing rates of problem gambling as internet gambling becomes much more available.

It would seem that the common factor between problem gamblers and non-problem gamblers in terms of motivations for gambling online (as found in Chapter 6) appears to be the convenience (80.7% problem gamblers vs 80.6% non-problem gamblers) and availability (64.3% problem gamblers vs 54.5% non-problem gamblers), although problem gamblers also like to gamble online for the anonymity (found in Chapters 5 and 6). There is still stigma associated with gambling. Betting shops are still typically regarded as masculine environments. Females may feel less alienated and stigmatised gambling online because of the anonymity of the internet. Furthermore, the embarrassment and shame can be great for individuals with gambling problems because of the lack of public awareness about how an activity like gambling can be as powerful as a drug for a vulnerable person. The privacy and secrecy the internet provides means that the stigma is removed and the person can engage in their behaviour without feeling shame.

Problem gamblers are often treated as a homogenous group, and the different gambling activities engaged in which one might become a problem gambler are ignored (Blaszczynski & Nower, 2002). This is ill-advised because different gambling activities may vary in terms of the type of person they attract (Holtgraves, 2009a), as well as the structural and situational characteristics they possess which can lead to the development of problem gambling. Hence it is probable that different types of people will engage in different gambling activities with different subsequent effects (Holtgraves, 2009a). Multi-gambling was identified in Chapter 4 as potentially problematic for online gambling due to the ability to engage in more than one gambling activity at the same time. However, the findings from Chapter 6 would suggest that there are no significant differences between problem gamblers and non-problem gamblers in terms of engaging in multi-gambling. What the survey did find was that multiple gambling opportunities may be more attractive for those participating in particular gambling activities (i.e.,

regular poker players, regular sports betters and regular horse-race betters), and younger people (i.e., those younger than 35 years old), rather than problem gamblers.

Furthermore, regular poker-players were significantly less likely to be a problem gambler compared to non-regular poker players (while regular sports betters; horse-race betters; spread betters and betting exchange users were significantly more likely to be a problem gambler than their non-regular counterparts). Previous research has also found that greater gambling involvement better characterises problem gambling than specific types of gambling activities (LaPlante, Nelson, LaBrie & Shaffer, 2009). Regular poker players were also significantly more likely to just play poker than non-regular poker players, while those that participated in two or more gambling activities were more likely to be a problem gambler than those that only played one activity. Previously, it was thought that problem gamblers would focus only on one activity (Breen & Zimmerman, 2002; Petry, 2003) but more recent research would suggest this is not the case. It would seem that problem gamblers are more likely to engage in many gambling activities (Kessler *et al.*, 2008) as the results of this thesis would support. There were also significant differences between males and females in terms of the activities they gambled on. Males were more likely to engage in poker, horse-race betting, dog race betting, sports betting, spread betting and betting exchanges, while females were more likely to engage in roulette, bingo, fruit machines, lottery and instant win games.

It is clear that problem gambling can have a detrimental effect on quality of life and well-being. This was evident in the interviews in Chapter 5. Problem gamblers experienced a high preoccupation with gambling leading to personal, social, and financial negative consequences. The health problems experienced by the problem gamblers included mental health problems (i.e., depression, anxiety, panic attacks, stress, suicidal thoughts and suicide attempts), physical health problems (i.e., sleeplessness, malnutrition, heartburn and health neglect), and emotional health problems (i.e., low self-esteem, low self-worth, and feeling guilty), as well as comorbid addictions such as alcohol and drug abuse. This is in line with previous findings suggesting a relationship between problem gambling and perceived quality of life (Pasternak & Fleming, 1999; Erickson, Molina, Ladd, Pietrzak, & Petry, 2005; Pietrzak, Molina, Ladd, Kerins, & Petry, 2005; Morasco *et al.*, 2006; Black, Moyer, & Schlosser, 2003). The high percentage of respondents identified in the online survey suggests that there is cause for concern regarding the negative impact of internet gambling. The fact that 14% were classed as problem gamblers and a further 29% were classed as at-risk

problem gamblers as defined by the PGSI (Ferris & Wynne, 2001), when the prevalence of problem gambling in the population is thought to be 0.7% (Wardle et al., 2010) is concerning. However, the participants in the online survey were a self-selected sample and therefore not representative of the population. It could be that problem gamblers were more likely to complete the survey due to their interest/preoccupation with gambling. Furthermore, a similar study of online gamblers found that 42.7% were classed as problem gamblers or at risk gamblers (Wood & Williams, 2007b).

Problem gamblers experienced a wide range of emotions when gambling online and they experienced extreme highs and lows. Chapter 6 found that problem gamblers were significantly more likely to feel euphoria, excitement, anger, escapism, lonely, frustrated, irritable, ashamed, empty, guilty and happy compared to non-problem gamblers. Participants in Chapter 5 also talked about experiencing an emotional ‘roller coaster ride’ (Nixon, Solowoniuk, Hagen & Williams, 2005) when gambling:

‘It takes you on like a rollercoaster...up and down, up and down, like your emotions were up or down, up or down, never just normal’. (Rick, 26).

The causal relationship between gambling severity and specific medical conditions is poorly understood, and other factors may affect the relationship between problem gambling and some medical conditions (Morasco *et al.*, 2006). Chapter 5 found that problem gamblers, both online and offline, share many similarities regarding the impact the problem behaviour has on quality of life, e.g. experiencing mental health, physical health and emotional health problems. It would seem that problem gamblers experience a wide range of problems that non-problem gamblers do not experience, and the medium in which a person gambles appears to make no difference to the impact the problem behaviour has. However, the online survey only targeted internet gamblers and therefore it would be worth conducting a longitudinal large-scale study examining the differences between online and offline problem gamblers in terms of mental health, physical health and emotional health problems. Besides the DSM-IV (APA, 1994) criteria for problem gambling, the only difference between the problem online gamblers and the non-problem online gamblers was that the problem online gamblers were more likely to report gambling online for the anonymity. This supports the view that anonymity is a potentially problematic feature of online gambling, as identified in this thesis and reported by others (Griffiths, 2003b).

Clearly, clinicians need to be aware of the possibility problem gamblers may experience comorbidity such as depression, anxiety, suicidal ideation and alcohol and drug abuse. Undoubtedly, excessive gambling causes serious problems by itself. However, in some cases, the gambling behaviour may be seen as a symptom of experiential dysfunction that must be addressed along with the problematic behaviour (Porter *et al.*, 2004). It is most likely that problem gamblers will experience a range of physical, emotional and mental health problems but these will most likely vary between males and females, and between people across the lifespan, therefore sensitivity to individual differences is critical in therapeutic situations.

Regarding mobile phone gambling, and interactive television gambling, participation in these forms seems to be relatively low. Only one gambler in Chapter 5 reported gambling via i-TV, and no-one reported using a mobile phone to gamble. Chapter 6 indicated less than 10% ‘sometimes’ used a mobile phone to gamble, and 2.1% ‘sometimes’ gambled via i-TV. Why these forms of remote gambling have limited uptake is worthy of investigation. It could be that the technology is not yet sophisticated enough, or perhaps the majority of people do not have a mobile phone that supports these facilities. People may prefer to gamble remotely using the internet, as it is more convenient.

In terms of whether mobile phone gambling and i-TV gambling are potentially more addictive than offline gambling further research is required. Chapter 4 specifically looked at internet gambling, but many of the situational and structural characteristics identified could be applied to other remote forms of gambling. For example, Chapter 4 identified the ‘internet-only’ structural characteristics of ‘*remote wagering*’, and ‘*customer tracking*’, as also likely to have the same effect on the mobile phone. However, it would be worth examining mobile phone gambling and i-TV gambling individually to see if there are any differences compared to internet gambling. It is also speculated that the ‘availability’, ‘accessibility’, and ‘convenience’ situational characteristics identified in Chapter 4 would have a similar impact on mobile phone gambling as with internet gambling. Furthermore, gambling advertising appears to have an impact on the acquisition of gambling behaviour, including internet gambling (Derevensky, 2008). However, there is very little advertising for mobile phone gambling, or i-TV gambling so this could be one reason why other forms of remote gambling do not seem to be participated in much.

In terms of treatment, Chapter 5 found that approximately half of the problem gamblers had sought some sort of treatment and Chapter 6 found a very high percentage (86%) of problem gamblers had sought some sort of treatment for their gambling problem. This is surprising considering that only a small percentage of problem gamblers actually seek help (Volberg, 1999). But perhaps due to the increased popularity, prevalence, and availability of gambling, there is less social stigma attached to gambling addictions and people are more able to access help. This is an avenue that needs to be explored further, along with the perceptions and attitudes people have towards treatment for gambling addictions. The majority of those in Chapter 5 either gave up with treatment or did not seek it at all because of the perception that it did not work. It is also unclear whether those in Chapter 6 that sought treatment were able to stick with the treatment or whether they gave up with it. Understanding the barriers to treatment seeking and factors influencing drop out rates could lead to more successful treatment interventions.

Additional avenues for further research also include: Do male and female problem gamblers differ in their experience of problem gambling and the impact it has on quality of life and wellbeing? This could be important in terms of developing treatment interventions. It is worth pointing out that although most research has found higher levels of problem gambling in males, it is important not to forget the female experience. It could be worth conducting further empirical research using female only samples to determine what factors are most salient, although some researchers are starting to do this (e.g., Corney & Davis, 2010). More research is also required on the impact of problem gambling on family members, to provide support and help them develop successful coping mechanisms. Longitudinal research is necessary to examine whether quality of life and wellbeing can improve once a problem gambler starts treatment, or after recovery from a gambling problem.

7.1 Policy recommendations

This thesis makes original contributions to knowledge at a time where recent changes in the legislative framework governing gambling within the UK mean that internet gambling is set to grow substantially within the next decade. The Gambling Act 2005 has now been in force since September 2007 which has meant extensive changes within the UK, including legalising the advertising of gambling. Consequently the UK gambling industry is showing signs of becoming the fastest growing industry world-wide and therefore internet gambling is also likely to become a more serious social problem.

This thesis adds to the growing body of research on internet gambling by highlighting motivations for engaging in online gambling; demographics of online gamblers; predictors of problem online gambling; the psychosocial impact of problem online gambling and the specific structural and situational characteristics of online gambling which may be potentially more problematic online compared to offline gambling. Inhibiting factors of online gambling were also explored to see what some of the protective features of online gambling might be to help inform appropriate treatment interventions. The comprehensive list developed in Chapter 4 of over 60 structural, situational and internet specific characteristics of gambling is, as far as we're aware, the first of its kind to highlight all the potentially problematic features of internet gambling and the priorities for future research.

Additionally, the Grounded Theory developed in Chapter 5 of the motivating and inhibiting factors of internet gambling supports the findings in Chapter 4 and contributes to the literature by suggesting that a persons previous involvement in offline gambling before starting internet gambling could be a risk factor in developing an online gambling problem. Those who have no previous involvement with offline gambling may be at a greater risk of developing an online gambling problem due to the speed at which internet gambling can 'hook' someone. Previous involvement with offline gambling could provide individuals with some basic knowledge of the risks associated with gambling and reduce their risk of developing an online gambling problem. This suggests that greater awareness and education programmes are needed to inform people of the potential risks of online gambling.

The findings in Chapter 6 suggest regular poker players were less likely to be a problem gambler, whereas all other regular gamblers engaging in different activities (e.g., sports betting, roulette, horse/dog racing, bingo, fruit machines, etc) were more likely to be a problem gambler than their non-regular counterparts. The literature would suggest that those who gamble frequently are more likely to be a problem gambler, but clearly poker players are different in this respect. Therefore an additional avenue for further research is to look at the differences between different types of players and consequently treatment programmes may need to be tailored according to the type of gambling activity.

The findings of this thesis have important implications for policy and practice, as expanding on our understanding of internet gambling will inform regulation within the UK. Appropriate interventions for individuals with a gambling problem can be developed to help them control their gambling behaviour when using online gambling sites. Rather than categories of gambling activities (i.e., games of chance or games of skill) it would seem that it is the particular activity itself that influence problem gambling risk. In terms of treatment and harm minimisation, strategies that target specific gambling games may be more effective than those that cover a range of gambling modes (Young & Stevens, 2009).

It is clear then that there are many potential hazards particular to internet gambling (e.g. inability to protect vulnerable individuals such as underage and people known to have a gambling problem; and to prevent gambling while intoxicated or gambling at work). However, the internet can also provide a unique opportunity for implementing harm reduction efforts. For example, online customer tracking could potentially be used to control the extent of gambling by specific users. Therefore empirical research analysing customer tracking data is required, to examine online gambling participation and activity, without having to rely on self-report data. Retrospective self-reports are limited in terms of the reliability and validity of information they provide about changes in gambling behaviour that occur over time. It is well noted that people's accounts of their actions do not always correlate with their actual behaviours (Baumeister, Vohs, & Funder, 2007). By evaluating gamblers' actual online behaviour, a much more accurate record of gambling activities and players behaviour patterns can be created (LaBrie *et al.*, 2008).

Since 2007, gambling advertising has been legal in the UK, and has played an important role in normalising gambling. There is far more advertising for internet gambling compared to offline forms of gambling and it is thought that this might have more of an impact on internet gambling behaviour. Advertising can stimulate more people to try gambling that might otherwise not have engaged in the behaviour. Exposure to gambling advertisements may attract additional people, thus increasing the number of potential problem gamblers. Furthermore, gambling exposure via advertisements has been found to lead to positive attitudes towards gambling and an increase in gambling intentions (Lee, Lumanski & Jun, 2008). Therefore, as gambling advertising has a direct effect on gambling participation or problem gambling outcomes, it could be a potential public health issue (Griffiths, 2005a). The findings from Chapters 5 and 6 suggest that

advertising may have a different effect on different people. Females were more likely to report gambling online as a result of advertisements and the advertisements also had an impact on the gambling website they chose. In Chapter 5, a mixture of problem and non-problem gamblers, both online and offline, commented that they didn't think advertising had much impact on their gambling behaviour, but that it probably did influence other people. In Chapter 6, non problem gamblers and males were more likely to comment that advertisements do not influence their gambling behaviour. Gambling providers and regulators should develop more comprehensive and socially responsible advertisements otherwise they may well become responsible for failing to protect the public from gambling related harms caused by excessive, aggressive and misleading advertising (McMullen & Miller, 2009). Policy makers could reduce problematic gambling by placing restrictions on when and how gambling is advertised in the media (Lee *et al.*, 2008).

Problem gamblers also had stronger views about gambling advertisements and felt that they should be banned or at least the dangers of gambling should be advertised more. However, the non problem gamblers did not think gambling advertising should be banned. There should be greater awareness of the dangers of gambling through advertising in the same way that the dangers of smoking cigarettes and drinking alcohol is advertised. There is strong evidence that gambling can have adverse health, emotional and financial problems on many more people other than the person classed as a 'problem gambler'. Policy also needs to address these wider impacts, as is the case in policies addressing harm from alcohol consumption and smoking tobacco.

There are also issues that need to be considered and recommendations regarding the structural and situational characteristics of internet gambling and harm minimisation. For example, policy makers may wish to consider focusing on regulating factors relating to payment, and player awareness and education, so players themselves can be aware of characteristics to look out for and how to control their gambling behaviour. Gambling websites should clearly display information on account activity such as warnings of potentially harmful patterns of play, amount of money spent, and time spent online. Links to problem gambling support should also be displayed, and players should have the ability to pre-commit to a certain level of expenditure and should have the ability to self-exclude. However, gambling websites should continue to be fun, exciting and play-inducing, but with the eventual aim of minimizing harm.

7.2 Final remarks

Online problem gambling can have huge psychosocial consequences for an individual, affecting quality of life and wellbeing. The effects of problem gambling are the same regardless of the medium in which a person gambles. However, what might be more important is the speed in which an online gambling problem can take place – typically developing faster than an offline gambling problem. Particular structural and situational characteristics of internet gambling have been found to be more problematic online than they would be offline and could account for the fact that a gambling problem can develop quicker online compared to offline. Furthermore, those with no previous experience with offline gambling prior to engaging in online gambling may be more at risk of developing an online gambling problem than a person who has experienced non-problematic offline gambling. It could be that experience with offline gambling provides an individual with an intrinsic knowledge/awareness of the risks associated with gambling, whereas a person with no experience may not be aware of how problematic it can be. Clearly, as internet gambling is still a relatively new phenomenon, there is a need for greater awareness and education programmes to inform people of the risks associated with online gambling.

Although this research has provided information to help our understanding of internet gambling behaviour and its relationship to problem gambling, one important question remains unanswered to some extent: Is internet gambling more addictive than offline gambling, or is it simply that problem gamblers are drawn to gamble on the internet for the convenience and availability? There does seem to be evidence that internet gamblers are already well familiar with gambling having gambled offline previously, but also it would seem that internet gambling is attracting people that otherwise would never have gambled. This was apparent in some of the interviews in Chapter 5. One participant reported gambling online because of an email they received saying they would double whatever she deposited and it started from there. It would seem that gambling websites will use unscrupulous measures to entice people to gamble such as targeting known problem gamblers and depositing money in their account to get them to gamble. This is certainly an area which requires further research.

By acknowledging structural characteristics, researchers are also acknowledging the ability of the design of gambling websites to manipulate gambling behaviour. Through the identification of these structural and situational characteristics, and careful evaluation of how they impact on gambling behaviour, there are clear implications for

the treatment and prevention of problem gambling related to internet gambling. Clinicians and treatment professionals need to have a good understanding of the design of internet gambling websites as this will give them additional insight into the motivation of the problem online gambler. In treatment, the clinician can explore whether any of these situational or structural characteristics were reasons for their gambling. For example, some online gamblers may be affected by the high event frequency, the multi-gambling opportunities, websites with free offers, the anonymity or any other factors. The fundamental advantage of having an awareness of the psychology of internet gambling and website design is that it may facilitate the treatment providers understanding of specific player motivations.

The findings of this thesis show that the way websites are designed can entice people to start gambling and the situational and structural characteristics of websites can have a potentially damaging impact on gambling behaviour, particularly on potentially vulnerable players. Although there are extensive gaps in empirical knowledge with respect to the effects of particular situational and structural characteristics of internet gambling, in many areas, existing literature has been updated and enhanced through the results of this thesis. New concepts and ideas that require further empirical investigation have been suggested. It is hoped that the work presented in this thesis will go some way to implementing changes to gambling regulations and policy.

References

- Aasved, M. (2002). *The Psychodynamics and Psychology of Gambling*. Springfield, Illinois, U.S.A.: Charles C Thomas.
- Abbott, M. (2007). Situational factors that affect gambling behavior. In: G. Smith, G., Hodgins, D.C., and Williams, R.J. eds., *Research and Measurement Issues in Gambling Studies*. Elsevier, Academic Press, 2007.
- Abbott, M., & Volberg, R. (1996). The New Zealand national survey of problem and pathological gambling. *Journal of Gambling Studies*, 12, 143-160.
- Abbott, M., Volberg, R., Ronnberg, S. (2004). Comparing the New Zealand and Swedish national surveys of gambling and problem gambling. *Journal of Gambling Studies*, 20, 237-258.
- Abbott, M., Williams, M., & Volberg, R. (2004). A prospective study of problem and regular nonproblem gamblers living in the community. *Substance use & Misuse*, 39, 855-884.
- Alessi, S., & Petry, N. (2003). Pathological gambling severity is associated with impulsivity in a delay discounting procedure. *Behavioural Processes*, 64, 345-354.
- Allcock, C., & Grace, D. (1988). Pathological Gamblers are neither impulsive nor sensation-seekers. *Australian and New Zealand Journal of Psychiatry*, 22, 307-311.
- Alty, A., & Rodham, K. (1998). The ouch! Factor: problems in conducting sensitive research. *Qualitative Health Research* 8, 275-282.
- American Psychiatric Association, (1980). *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC.: APA.
- American Psychiatric Association, (1994). *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC: APA.
- American Psychiatric Association, (2000). *Diagnostic and Statistical Manual of Mental Disorders*. Washington, DC: APA.
- Amey, B. (2001). *Peoples participation in and attitudes to gambling, 1985-2000. Final results of the 2000 survey*. Wellington, New Zealand: Department of Internal Affairs.

- Anderson, G., & Brown, R. (1984). Real and laboratory gambling, sensation-seeking and arousal. *British Journal of Psychology*, *75*, 401-410.
- Anderson, P., de Bruin, A., Andus, K., Gordon, R., Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: a systematic review of longitudinal studies. *Alcohol & Alcoholism*, *44*, 229-243.
- Areni, C., & Kim, D. (1993). The influence of background music on shopping behaviour: Classical versus top-forty music in a wine store. *Advances in consumer research*, *20*, 336-340.
- Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*, 19-32.
- Bagby, R., Vachon, D., Bulmash, E., Toneatto, T., Quilty, L. & Costa, P. (2007). Pathological gambling and the five-factor model of personality. *Personality and Individual Differences*, *43*, 873-880.
- Bannister, P., Burman, E., Parker, I., Taylor, M., & Tindall, C. (1994). *Qualitative methods in Psychology: A research guide*. Buckingham: Open University Press.
- Baumeister, R., Vohs, K., & Funder, D. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behaviour? *Perspectives on Psychological Science*, *2*, 396-403.
- Barnes, B., & Parwani, S., (1987). Personality assessment of compulsive gamblers. *Indian Journal of Clinical Psychology*, *14*, 98-99.
- Baron, E., & Dickerson, M. (1999). Alcohol consumption and self-control of gambling behaviour. *Journal of Gambling Studies*, *15*, 3-15.
- Bartussek, D., Diedrich, O., Naumann, E. & Collett, W. (1993). Introversion, extraversion and event-related potential (ERP): a test of J.A. Grays theory. *Personality and Individual Differences*, *14*, 565-574.
- Beard, K. (2005). Internet addiction: A review of current assessment techniques and potential assessment questions. *CyberPsychology & Behavior*, *8*, 7-14.
- Bergh, C., Eklund, T., Sodersten, P., & Nordin, C. (1997). Altered dopamine function in pathological gambling. *Psychological Medicine*, *27*, 473-475.

- Bergh, C. & Kuhlorn, E. (1994). Social, psychological, and physical consequences of pathological gambling in Sweden. *Journal of Gambling Studies*, 10, 275-285.
- Bergler, E. (1957). *The Psychology of Gambling*. New York: Hill and Wang.
- Bersabe, R., & Arias, R. (2000). Superstition in Gambling. *Psychology in Spain*, 4, 28-34.
- Betting Market, (2010). Located at: <http://www.bettingmarket.com/anabmsamp056349.htm> (Last accessed 31 August 2010).
- Binde, P. (2007). Selling dreams – causing nightmares? On gambling advertising and problem gambling. *Journal of Gambling issues*, 20. Retrieved 29 June <http://www.camh.net/egambling/issue20/04binde.htm>
- Binde, P. (2009). Exploring the impact of gambling advertising: An interview study of problem gamblers. *International Journal of Mental Health and Addiction*, 7, 541-554.
- Birch, M., Miller, T., Mauthner, M., & Jessop, J. (2002). Introduction. In M. Mauthner, M. Birch, J. Jessop, & T. Miller (Eds.), *Ethics in qualitative research*. London: Sage.
- Birnbaum, M. (2004a). Human research and data collection via the internet. *Annual Review of Psychology* 55, 803-832.
- Birnbaum, M. (2004b). Methodological and ethical issues in conducting social psychology research via the internet. In C Sansone, C. C. Morf and A. T. Panter (eds), *Handbook of methods in social psychology* (pp. 359-382). Thousand Oaks, CA: Sage.
- Black, D., Monahan, P., Temkit, M. & Shaw, M., (2006). A family study of pathological gambling. *Psychiatry Research*, 141, 295-303.
- Black, D., Moyer, T., & Schlosser, S. (2003). Quality of life and family history in pathological gambling. *Journal of Nervous and Mental Disease*, 191, 124-126.
- Black, M., & Ricardo, I. (1994). Drug use, drug trafficking, and weapon carrying among low-income, African-American, early adolescent boys. *Pediatrics*, 93, 1065-1072.
- Blanco, C., Orensanz-Munoz, L., Blanco-Jerez, C., & Saiz-Ruiz, J. (1996). Pathological gambling and platelet MAO activity: a psychobiological study. *American Journal of Psychiatry*, 153, 119-121.

- Blanco, C., Potenza, M., Won Kim, S., Ibanez, A., Zaninelli, R., Saiz-Ruiz, J. & Grant, J. (2009). A pilot study of impulsivity and compulsivity in pathological gambling. *Psychiatry Research, 167*, 161-168.
- Bland, R., Newman, S., Orn, H., & Stebelsky, G. (1993). Epidemiology of pathological gambling in Edmonton. *Canadian Journal of Psychiatry, 38*, 108–12
- Blaszczynski, A. (1999). Pathological gambling and obsessive-compulsive spectrum disorders. *Psychological Reports, 84*, 107-113.
- Blaszczynski, A., Collins, P., Fong, D., Ladouceur, R., Nower, L., Shaffer, H., Tavares, H., Venisse, J. (2010). Responsible Gambling: General principles and minimal requirements. *Journal of Gambling Studies*, DOI 10.1007/s10899-010-9214-0
- Blaszczynski, A., Dumlao, V. & Lange, M. (1997). How much do you spend gambling? Ambiguities in survey question items. *Journal of Gambling Studies, 13*, 237-252.
- Blaszczynski, A., & Farrell, E. (1998). A case series of 44 completed gambling-related suicides. *Journal of Gambling Studies, 14*, 93–109.
- Blaszczynski, A., Ladouceur, R., Nower, L., & Shaffer, H. (2008). Informed choice and gambling: Principle for consumer protection. *The Journal of Gambling Business and Economics, 2*, 103-118.
- Blaszczynski, A., Ladouceur, R., Shaffer, H. (2004). A science-based framework for responsible gambling: The Reno model. *Journal of Gambling Studies, 20*, 301-317.
- Blaszczynski, A., & McConaghy, N. (1989). Anxiety and/or depression in the pathogenesis of addictive gambling. *International Journal of Addictions, 24*, 337–350.
- Blaszczynski, A., & McConaghy, N. (1994). Criminal offences in Gamblers Anonymous and hospital treated pathological gamblers. *Journal of Gambling Studies, 10*, 99–127.
- Blaszczynski, A., McConaghy, N., & Frankova, A. (1989). Crime, antisocial personality and pathological gambling. *Journal of Gambling Behavior, 5*, 137-152.
- Blaszczynski, A., McConaghy, N., & Frankova, A. (1990). Boredom proneness in pathological gambling. *Psychological Reports, 67*, 35-42.

- Blaszczynski, A., McConaghy, N., & Frankova, A. (1991). Control versus abstinence in the treatment of pathological gambling: a two to nine year follow up. *British Journal of Addiction*, 83, 299-306.
- Blaszczynski, A., & Nower, L., (2002). A pathways model of problem and pathological gambling. *Addiction*, 97, 487-499.
- Blaszczynski, A., Steel, Z., & McConaghy, N. (1997). Impulsivity in pathological gambling: the antisocial impulsivist. *Addiction*, 92, 75-87.
- Blaszczynski, A., Wilson, A., & McConaghy, N. (1986). Sensation seeking and pathological gambling. *British Journal of Addiction*, 81, 113-117.
- Blum, K., Sheridan, P., Wood, R., Braverman, E., Chen, T., Cull, J., Comings, D. (1996). The D2 dopamine receptor gene as a determinant of reward deficiency syndrome. *Journal of the Royal Society of Medicine*, 89, 396-400.
- Bonnaire, C., Lejoyeux, M., & Dardennes, R. (2004). Sensation seeking in a french population of pathological gamblers : Comparison with regular and non-gamblers. *Psychological Reports*, 94, 1361-1371.
- Bourgault, C., & Demers, A. (1997). Solitary drinking: a risk factor for alcohol-related problems. *Addiction*, 92, 303-312.
- Brannen, J. (1992). Combining qualitative and quantitative approaches: an overview. In Brannen, J. *Mixing methods: Qualitative and quantitative research*, pp.3-37. Aldershot: Avebury.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3, 77-101.
- Breakwell, G., & Millward, L. (1995). *Basic evaluation methods: analysing performance, practice and procedure*. Wiley, Blackwell.
- Breen, R. (2004). Rapid onset of pathological gambling in machine gamblers: A replication. *International Journal of Mental Health and Addiction*. 2, 44-49.
- Breen, R., & Zuckerman, M. (1999). 'Chasing' in gambling behavior: Personality and cognitive determinants. *Personality and Individual Differences*, 27, 1097-1111.

- Brenner, V. (2002). Generalizability issues in internet-based survey research: implications for the internet addiction controversy. In B. Batinic, U-D. Reips and M. Bosnjak (eds.), *Online social sciences* (pp. 93-114). Seattle, WA:
- Brindley, C., (1999). The marketing of gambling on the Internet. *Internet Research: Electronic Networking Applications and Policy*, 9, 281-286.
- Brinkmann, S., & Kvale, S. (2008). Ethics in qualitative psychological research. In C. Willig & W. Stainton Rogers, *The SAGE handbook of qualitative research*. London: Sage.
- Brown, R. (1986). Arousal and sensation-seeking components in the general explanation of gambling and gambling addictions. *International Journal of the Addictions*, 21, 1001-1016.
- Brown, R. (1987). Pathological gambling and associated patterns of crime: Comparisons with alcohol and other drug addictions. *Journal of Gambling Behavior* 3, 98–114
- Brown, S., & Coventry, L. (1997). *Queen of hearts: The needs of women with gambling problems*. Melbourne: Financial and Consumer Rights Council.
- Browne, B., & Brown, D. (1994). Predictors of lottery gambling among American college students. *The Journal of Social Psychology*, 134, 339-347.
- Bryman, A. (1984). The debate about quantitative and qualitative research: a question of method or epistemology? *The British Journal of Sociology*, 35, 75-92
- Bryman, A. (1992). Quantitative and qualitative research: further reflections on their integration. In Brannen, J. *Mixing methods: Qualitative and quantitative research*. Aldershot: Avebury.
- Buchanan, T., & Smith, J. (1999). Research on the internet: validation of a world-wide web mediated personality scale. *Behaviour Research Methods Instruments and Computers*, 31, 565-571.
- Buss, A. (1978). *Psychology: Behavior in perspective*. New York: John Wiley & Sons.
- Campbell, D., & Fiske, D. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81-105.

- Campbell-Meiklejohn, D., Woolrich, M., Passingham, R., Rogers, R. (2008). Knowing when to stop: The brain mechanisms of chasing losses. *Biological Psychiatry*, 63, 293-300.
- Carrasco, J., Saiz-Ruiz, J., Hollander, E., Cesar, J., Lopez-Ibor, J. (1994). Low platelet monoamine oxidase activity in pathological gambling. *Acta Psychiatrica Scandinavica*, 90, 427-431.
- Carroll, D., & Huxley, J., (1994). Cognitive, dispositional and psychophysiological correlates of dependent slot machine gambling in young people. *Journal of Applied Social Psychology*, 24, 1070-1083.
- Centre for Gambling Research, Australian National University (2004). *2003 Victorian longitudinal community attitudes survey*. Gambling Research Panel Report No. 6, Victoria.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage.
- Cherryholmes, C. (1992). Notes on pragmatism and scientific realism. *Educational Researcher*, 13-17.
- Christian, L. & Dillman, D. (2004). The influence of graphical and symbolic language manipulations on responses to self-administered questions. *Public Opinion Quarterly* 68, 57-80.
- Clarke, D., (2004). Impulsiveness, locus of control, motivation and problem gambling. *Journal of Gambling Studies*, 20, 319-345.
- Clarke, D., & Clarkson, J. (2009). A preliminary investigation into motivational factors associated with older adults' problem gambling. *International Journal of Mental Health and Addiction*, 7, 12-28.
- Clarke, L., Lawrence, A. J., Astley-Jones, F., & Gray, N. (2009). Gambling near-misses enhance motivation to gamble and recruit win-related brain circuitry. *Neuron*, 61: 481-490.
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd edition). New York: Academic Press.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.

- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. Routledge publishers. Oxford.
- Comings, D., Rosenthal, R., Lesieur, H., Rugle, L., Muhleman, D., Chiu, C., Dietz, G., Gade, R. (1996). A study of the dopamine D2 receptor gene in pathological gambling. *Pharmacogenetics*, 6, 223-234.
- Cooper, M. (1994). Motivations for alcohol use among adolescents: development and validation of a four-factor model. *Psychological Assessment*, 6, 117-128.
- Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, 3rd edn. London: Sage
- Corney, R., & Davis, J. (2010). The attractions and risks of internet gambling for women: A qualitative study. *Journal of Gambling Issues*, 24, 121-139.
- Coventry, K., & Brown, R. (1993). Sensation seeking, gambling and gambling addictions. *Addiction*, 88, 541-554.
- Coventry, K., & Norman, A. (1997). Arousal, sensation seeking and frequency of gambling in off-course horse racing bettors. *British Journal of Psychology*, 88, 671-681.
- Couper, M., Traugott, M. & Lamias, M. (2001). Web survey design and administration. *Public Opinion Quarterly* 65, 230-254.
- Cousineau, T., Green, T., & Rancourt, D. (2005). Web chatter before and after the women's health initiative results: A content analysis of online menopause message boards. *Journal of Health and Communication* 11, 131-147.
- Creswell, J. (2009). *Research Design: Qualitative, quantitative and mixed methods approaches*. 3rd edition. Thousand Oaks, Sage.
- Creswell, J., & Plano-Clark, V. (2007). *Designing and conducting mixed methods research*. London: Sage.
- Crockford, D., & El-Guebaly, N. (1998). Psychiatric Comorbidity in Pathological Gambling: A Critical Review. *Canadian Journal of Psychiatry*, 43, 43-50.
- Cunningham-Williams, R., Abdallah, A., Callahan, C., & Cottler, L. (2007). Problem gambling and violence among community-recruited female substance abusers. *Psychology of Addictive Behaviours*, 21, 239-243.

- Cunningham-Williams, R., Cottler, L., Compton, W., Spitznagel, E.L. (1998). Taking chances: problem gamblers and mental health disorders—results from the St. Louis epidemiologic catchment area study. *American Journal of Public Health*, 88, 1093–96
- Currie, S., Hodgins, D., Wang, J., Wynne, H., & Chen, S. (2006). Risk of harm among gamblers in the general population as a function of level of participation in gambling activities. *Addiction*, 101, 570-580.
- Davies, D., Sundahl, I., & Lesbo, M. (2000). Illusory personal control as a determinant of bet size and type in casino craps games. *Journal of Applied Social Psychology*, 30, 1224-1242.
- Davison, J. (2004). ‘Dilemmas in research: issues of vulnerability and disempowerment for the social worker/researcher’, *Journal of Social Work Practice*, 18, 477-490.
- DeFuentes-Merillas, L., Koeter, M., Schippers, G., & van den Brink, W. (2004). Temporal stability of pathological scratchcard gambling among adult scratchcard buyers two years later. *Addiction*, 99, 117-127.
- Denzin, N. (1970). *The Research Act in Sociology*. London: Butterworth
- Derevensky, J. (2008, July). *Everyone’s a winner! Youth perceptions of gambling advertisements*. Paper presented at the European Association for the Study of Gambling Conference, Slovenia.
- Derevensky, J., & Gupta, R., (2007). Internet Gambling Amongst Adolescents: A Growing Concern. *International Journal of Mental Health Addiction*, 5, 93-101.
- Desai, R., Maciejewski, P., Dausey, D., Calderone, B. & Potenza, M. (2004). Health correlates of recreational gambling in older adults. *American Journal of Psychiatry*, 161, 1672-1679.
- Desai, R., Maciejewski, P., Pantalon, M. & Potenza, M. (2006). Gender Differences Among Recreational Gamblers: Association With the Frequency of Alcohol Use. *Psychology of Addictive Behaviors*, 20, 145-153.
- Dickerson, M., Cunningham, R., Legg England, S. & Hinchy, J. (1991). On the determinants of persistent gambling. III. Personality, prior mood, and poker machine play. *The International Journal of the Addictions*, 26, 531-548.

- Dickerson, M., & O'Connor, J. (2006). *Gambling as an Addictive Behaviour: Impaired Control, Harm Minimisation, Treatment and Prevention*. Cambridge University Press.
- Dielman, T. E. (1979). Gambling: A social problem? *The Journal of Social Issues*, 35, 36-42.
- Dixon, L., Trigg, R., & Griffiths, M. (2007). An empirical investigation of music and gambling behaviour. *International Gambling Studies*, 7, 297-308.
- Douglas, D. (2004). Grounded theory and the 'and' in entrepreneurship research. *Electronic Journal of Business Research Methods*, 2, 59-68.
- Dowling, N., Smith, D., & Thomas, T. (2004). Electronic gaming machines: are they the 'crack-cocaine' of gambling? *Addiction*, 100, 33-45.
- Downey, H., Hamilton, K., & Catterall, M. (2007). Researching vulnerability: what about the researcher? *European Journal of Marketing*, 41, 734-739.
- Dreyfus, H., & Dreyfus, S. (1990). What is morality? A phenomenological account of the development of ethical expertise. In D. Rasmussen (ed.), *Universalism vs. Communitarianism: Contemporary Debates in Ethics*. Cambridge, MA: MIT Press
- Drury, I. (2009). Third of gambling websites let children place online bets. *Mail Online*. January 13, 2009.
- Duhig, A., Maciejewski, P., Desai, R., Krishnan-Sarin, S. & Potenza, M. (2007). Characteristics of adolescent past-year gamblers and non-gamblers in relation to alcohol drinking. *Addictive Behaviors*, 32, 80-89.
- Duncombe, J. & Jessop, J. (2002). 'Doing rapport' and the ethics of 'faking friendship'. In M. Mauthner, M. Birch, J. Jessop and T. Miller (eds), *Ethics in Qualitative Research*. London: Sage.
- Eadington, W., (2004). The future of online gambling in the United States and elsewhere. *Journal of Public Policy and Marketing*, 23, 214-219.
- eCOGRA, (2007) *An exploratory investigation in the attitudes and behaviours of internet casino and poker players*. Report commissioned by eCOGRA: Nottingham Trent University.

- el-Guebaly N., Patten S., Currie S., Williams J., Beck C., Maxwell C., & Wang J. (2006). Epidemiological associations between gambling behaviour, substance use and mood and anxiety disorders. *Journal of Gambling Studies*, 22, 275–287.
- Elliott, R., Fischer, C., & Rennie, D. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, 38, 215-229.
- EmaxHealth. (2010). Compulsive online gambling affects growing number of women. Located at <http://www.emaxhealth.com/1275/49/35139/compulsive-online-gambling-affects-growing-number-women.html> (Last accessed August 25 2010).
- Erickson, L., Molina, C., Ladd, G., Pietrzak, R., & Petry, N. (2005). Problem and pathological gambling are associated with poor mental and physical health in older adults. *International Journal of Geriatric Psychiatry*, 20, 754-759.
- Ess, C. (2007). Internet research ethics. In Joinson, A., McKenna, K., Postmes, T., & Reips, U-D. (2007). *The oxford handbook of internet psychology*. Oxford University Press.
- Evans, L., & Delfabbro, P. (2005) Motivations for change and barriers to help-seeking in Australian problem gamblers. *Journal of Gambling Studies*, 21, 133-155.
- Eysenck, H., (1947). *Dimensions of Personality*. London: Routledge & Kegan Paul.
- Eysenck, H., (1952). *The scientific study of personality*. London: Routledge & Kegan Paul Ltd.
- Eysenbach, G. & Wyatt, J. (2002). Using the internet for surveys and health research. *Journal of Medical Internet Research*, 4, 13.
- Federal Trade Commission, (2007). FTC warns consumers about online gambling and children. Retrieved from: <http://www.ftc.gov/opa/2002/06/onlinegambling.shtm> (Last accessed 3 December 2010).
- Ferraro, G., Caci, B., D'Amico, A., & Di Blasi, M., (2007). Internet Addiction Disorder: An Italian Study. *CyberPsychology & Behavior*, 10, 170-175.
- Ferris, J., & Wynne, H. (2001). *The Canadian problem gambling index: Final report*. Ottawa: Canadian Centre on Substance Abuse.

- Fisher, S., (1993). The pull of the fruit machine: a sociological typology of young players. *Sociological Review*, 41, 446-468.
- Fisher, S., (1999). A prevalence study of gambling and problem gambling in british adolescents. *Addiction Research*, 7, 509-538.
- Folino, J., & Abait, P. (2009). Pathological gambling and criminality. *Current Opinion in Psychiatry*, 22, 477-481.
- Frank, M., Lester, D., & Wexler, A., (1991). Suicidal behavior among members of Gamblers Anonymous. *Journal of Gambling Studies*, 7, 249-254.
- Frank, M., & Smith, C., (1989). Illusion of control and gambling in children. *Journal of Gambling Behaviour*, 5, 127-136.
- Friedman, C., Wyatt, J., Smith, A., & Kaplan, B. (1997). *Evaluation methods in medical informatics*. New York: Springer.
- Gadboury, A., & Ladouceur, R. (1989). Erroneous perceptions and gambling. *Journal of Social Behaviour and Personality*, 4, 411-420.
- Gambino, B., Fitzgerald, R., Shaffer, H., Renner, J., & Courtage, P. (1993). Perceived family history of problem gambling and scores on SOGS. *Journal of Gambling Studies*, 9, 169-184.
- Gambling Commission, (2010). Survey data on gambling participation – January 2010. Retrieved from http://www.gamblingcommission.gov.uk/research_consultations/research/survey_data_on_remote_gam/survey_data_on_remote_gambling.aspx
- GamCare. (2006). Care services 2006 report. Retrieved from <http://www.gamcare.org.uk/data/files/pdfs/CareServices2006.pdf>
- Glaser, B. (1992). *Basics of Grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Glaser, B., & Strauss, A. (1967). *The discovery of Grounded theory*. Chicago: Aldine.
- Golder, S., & Donath, J. (2004). Hiding and revealing in online poker games. *Proceedings of the ACM conference on computer-supported cooperative work*.

- Gonzalez-Ibanez, A., Aymami, M., Jimenez, S., Domenech, J., Granero, R. & Lourido-Ferreira *et al.*, (2003). Assessment of pathological gamblers who use slot machines. *Psychological Reports*, *93*, 707-716.
- Gonzalez-Ibanez, A., Mora, M., Gutierrez-Maldonado, Ariza, A. & Lourido-Ferreira. (2005). Pathological gambling and age: Differences in personality, psychopathology, and response to treatment variables. *Addictive Behaviors*, *30*, 383-388.
- Grant, J., & Kim, S. (2001). Demographic and clinical features of 131 adult pathological gamblers. *Journal of Clinical Psychiatry*, *62*, 957-962.
- Grant, J., & Kim, S. (2002). Gender differences in pathological gamblers seeking medication treatment. *Comprehensive Psychiatry*, *43*, 56-62.
- Greene, J., Caracelli, V., & Graham, W. (1989). Toward a conceptual framework for mixed method evaluation designs. *Educational Evaluation and Policy Analysis*, *11*, 255-274.
- Griffiths, M., (1990a). The cognitive psychology of gambling. *Journal of Gambling Studies*, *6*, 31.
- Griffiths, M. (1990b). The acquisition, development, and maintenance of fruit machine gambling in adolescents. *Journal of Gambling Studies*, *6*, 193-204.
- Griffiths, M. (1991). Psychobiology of the near-miss in fruit machine gambling. *Journal of Psychology*, *125*, 347-357.
- Griffiths, M. (1993). Fruit machine gambling: The importance of structural characteristics. *Journal of Gambling Studies*, *9*, 101-120.
- Griffiths, M. (1994). The role of cognitive bias and skill in fruit machine gambling. *British Journal of Psychology*, *85*, 351-369.
- Griffiths, M. (1995). *Adolescent Gambling*. Routledge.
- Griffiths, M. (1999a). Gambling technologies: Prospects for problem gamblers. *Journal of Gambling Studies*, *15*, 265-283.
- Griffiths, M. (1999b). The psychology of the near-miss (revisited): A comment on Delfabbro & Winefield (1999). *British Journal of Psychology*, *90*, 441-445.

- Griffiths, M. (2000a). Does Internet and computer "addiction" exist? Some case study evidence. *CyberPsychology & Behavior*, 3, 211-218.
- Griffiths, M. (2000b). Internet Addiction - Time to be Taken Seriously? *Addiction Research*, 8, 413-418.
- Griffiths, M. (2001). Internet gambling: Preliminary results of the first U.K. prevalence study. *The Electronic Journal of Gambling Issues* [online], 5, 12/02/08. Available at: http://www.camh.net/egambling/issue5/research/griffiths_article.html.
- Griffiths, M. (2002). Internet gambling in the workplace. In: Anandarajan, M and Simmers, C., eds., *Managing Web usage in the workplace: A social, ethical and legal perspective*. Hershey, PA: Idea Publishing, 2002, pp. 148-167.
- Griffiths, M. (2003a). Adolescent gambling: Risk factors and implications for prevention, intervention and treatment. In: Romer, D., ed., *Reducing adolescent risk: Toward an integrated approach*. Sage publications, 2003a, pp. 223-238.
- Griffiths, M. (2003b). Internet gambling: Issues, concerns and recommendations. *CyberPsychology & Behavior*, 6, 557-568.
- Griffiths, M. (2003c). Problem Gambling. *The Psychologist: Bulletin of the British Psychological Society*, 16, 582-584.
- Griffiths, M. (2004). Betting your life on it. *British Medical Journal*, 329, 1055-1056.
- Griffiths, M. (2005a). Does Gambling Advertising Contribute to Problem Gambling? *International Journal of Mental Health Addiction*, 3, 15-25.
- Griffiths, M. (2005b). Online betting exchanges: A brief overview. *Youth Gambling International*, 5, 1-2.
- Griffiths, M. (2006a). The lost gamblers. *Significance: Journal of the Royal Statistical Society*, 3, 13-15.
- Griffiths, M. (2006b). Internet trends, projections & effects: What can looking at the past tell us about the future. *Casino & Gaming International*, 4, 37-43.
- Griffiths, M. (2006c). Impact of Gambling Technologies in a Multi-Media World. *Casino & Gaming International*, 2, 15-18.

- Griffiths, M. (2006d). Addiction Trends: Internet V Casino Gambling. *Casino & Gaming International*, 2 (January), 85-91.
- Griffiths, M. (2007a). *Gambling addiction and its treatment within the NHS: A guide for healthcare professionals*. London: British Medical Association.
- Griffiths, M. (2007b). Exploring gambling practices in work and educational environments. *Casino & Gaming International*, 1, 17-25.
- Griffiths, M. (2007c). Social Acceptability and Familiarity that Breeds Trust and Loyalty. *Casino & Gaming International*, 3, 69-72.
- Griffiths, M. (2007d). Mobile Phone Gambling. In: D. TANIAR, ed., *Encyclopedia of mobile computing and commerce*. Pennsylvania: Information Science Reference, 2007c, pp. 553-556.
- Griffiths, M. (2007e). Brand psychology: Social acceptability and familiarity that breeds trust and loyalty. *Casino and Gaming International*, 3, 69-72.
- Griffiths, M. (2008). 'Foot in the door': Player enhancement or player exploitation? *World Online Gambling Law Report*, 7, 15-16.
- Griffiths, M. (2010a). The use of online methodologies in data collection for gambling and gaming addictions. *International Journal of Mental Health and Addiction*, 8, 8-20.
- Griffiths, M. (2010b). Gambling addiction among football players: Causes and consequences. *World Sports Law Report*, 8.
- Griffiths, M., & Barnes, A. (2008). Internet gambling: An online empirical study among student gamblers. *International Journal of Mental Health and Addiction*, 6, 194-204.
- Griffiths, M., & Bingham, C. (2002). Bingo playing in the UK: The influence of demographic factors on play. *International Gambling Studies*, 2, 51-60.
- Griffiths, M., & Delfabbro, P. (2002). The biopsychosocial approach to gambling: Contextual factors in research and clinical interventions. *The Electronic Journal of Gambling Issues*, 5, 1-34.
- Griffiths, M., & Dunbar, D. (1997). The role of familiarity in fruit machine gambling. *Society for the Study of Gambling Newsletter*, 29, 15-20.

- Griffiths, M., & Linsey, A. (2006). Adolescent gambling: Still a cause for concern? *Education and Health, 24*, 9-11.
- Griffiths, M., & Parke, J. (2002). The Social Impact of Internet Gambling. *Social Science Computer Review, 20*, 312-320.
- Griffiths, M., & Parke, J. (2003). The Environmental Psychology of Gambling. *In: G. Reith, ed., Gambling: Who wins? Who loses?* Amherst, N.Y. Prometheus Books, 2003, pp. 277-292.
- Griffiths, M., & Parke, J. (2004). Gambling on the internet: Some practical advice. *Journal of Gambling Issues, 11*, 1-5.
- Griffiths, M., & Parke, J. (2005). The psychology of music in gambling environments: An observational research note. *Journal of Gambling Issues, 13*. Located at: http://www.camh.net/egambling/issue13/jgi_13_griffiths_2.html.
- Griffiths, M., & Parke, J. (2007). Betting on the couch: A thematic analysis of internet gambling using case studies. *Social Psychological Review, 9*, 29-35.
- Griffiths, M., Parke, A., Wood, R., Parke, J. (2006). Internet gambling: An overview of psychosocial impacts. *Gaming Research and Review Journal, 27*, 27-39.
- Griffiths, M., Parke, J., Wood, R., & Rigbye, J. (2009). Online poker gambling in university students: Further findings from an online survey. *International Journal of Mental Health and Addiction, 8*, 82-89.
- Griffiths, M., & Sutherland, I. (1998). Adolescent gambling and drug use. *Journal of Community & Applied Social Psychology, 8*, 423-427.
- Griffiths, M., Wardle, J., Orford, J., Sproston, K. & Erens, B. (2009). Socio-demographic correlates of internet gambling: findings from the 2007 British Gambling Prevalence Survey. *CyberPsychology and Behavior, 12*, 199-202.
- Griffiths, M., Wardle, J., Orford, J., Sproston, K. & Erens, B. (2010). Gambling, alcohol consumption, cigarette smoking and health: findings from the 2007 British Gambling Prevalence Survey. *Addiction Research and Theory, 18*, 208-223.
- Griffiths, M., & Whitty, M. (2010). Online behavioural tracking in internet gambling research: Ethical and methodological issues. *International Journal of Internet Research Methods, 3*, 104-117.

- Griffiths, M., & Wood, R. (2001). The psychology of lottery gambling. *International Gambling Studies, 1*, 27-44.
- Griffiths, M., & Wood, R. (2007). Adolescent Internet gambling: Preliminary results of a national survey. *Education and Health, 25*, 23-27.
- Griffiths, M. & Wood, R. (2008). Gambling loyalty schemes: Treading a fine line? *Casino and Gaming International, 4*, 105-108.
- Griffiths, M., Wood, R. & Parke, J. (2009). Social responsibility tools in online gambling: A survey of attitudes and behaviour among Internet gamblers. *CyberPsychology and Behavior, 12*, 413-421.
- Gupta, R., & Derevensky, J. (1997). Familial and social influences on juvenile gambling behavior. *Journal of Gambling Studies, 13*, 179-191.
- Gupta, R., & Derevensky, J. (1998). Adolescent gambling behavior: A prevalence study and examination of the correlates associated with problem gambling. *Journal of Gambling Studies, 14*, 319-345.
- Hall, G., Carriero, N., Takushi, R., Montoya, I., Preston, K., & Gorelick, D. (2000). Pathological Gambling Among Cocaine-Dependent Outpatients. *American Journal of Psychiatry, 157*, 1127-1133.
- Hardoon, K., Gupta, R., & Derevensky, J. (2004). Psychosocial variables associated with adolescent gambling. *Psychology of Addictive Behaviors, 18*, 170-179.
- Harrigan, K. (2007). Slot machine structural characteristics: Distorted player views of payback percentages. *Journal of Gambling issues, 20*, 215-234.
- Harrigan, K. (2008). Slot machine structural characteristics: creating near misses using high award symbol ratios. *International Journal of Mental Health and Addiction, 6*, 353-368.
- Harrigan, K. (2009). Slot machines: Pursuing responsible gaming practices for virtual reels and near misses. *International Journal of Mental Health and Addiction, 7*, 68-83.
- Hastings, G., McDermott, L., Andus, K., Stead, M., & Thomson, S. (2006). *The extent, nature and effects of food promotion to children: A review of the evidence. Technical paper prepared for the World Health Organisation.* Geneva: World Health Organisation.

- Hawkswood, C. (2005). An eye for the future of remote gaming. *Casino & Gaming International*, Sep, 69-71.
- Hayer, T., Griffiths, M., & Meyer, G. (2005). Gambling. In T.P. Gullotta & G.R. Adams (Eds.), *Handbook of adolescent problems: Evidence-based approaches to prevention and treatment* (pp. 467-486). New York: Springer Science & Business Media.
- Henn, M., Weinstein, M., & Foard, N. (2009). *A critical introduction to social research. 2nd Ed.* Sage Publications.
- Henry, S. (1996). Pathological gambling: Etiologic considerations and treatment efficacy of eye movement desensitization/reprocessing. *Journal of Gambling Studies*, 12, 395-405.
- Hesse-Biber, S. N., & Leavy, P. (2006). *The practice of qualitative research*. Thousand Oaks, London: Sage.
- Hills, A.M., Hill, S., Mamone, N. & Dickerson, M. (2001). Induced mood and persistence at gaming. *Addiction*, 96, 1629-1638.
- Himes, W. (2005). Creating a new interactive dynamic. *Casino & Gaming International*, Sep, 73-75.
- Hing, N., & Breen, H. (2001). Profiling lady luck? An empirical study of gambling and problem gambling amongst female club members. *Journal of Gambling Studies*, 17, 47-67.
- Hodgins, D., & El-Guebaly, N. (2000). Natural and treatment-assisted recovery from gambling problems: a comparison of resolved and active gamblers. *Addiction*, 95, 777-789.
- Hodgins, D., & El-Guebaly, N. (2004). Retrospective and prospective reports of precipitants to relapse in pathological gambling. *Journal of Consulting and Clinical Psychology*, 72, 72-80.
- Hodgins, D., & Peden, N. (2005). Natural course of gambling disorders: Forty-month follow-up. *Journal of Gambling Issues*, 14, 117-131.
- Holtgraves, T. (2009a). Gambling, gambling activities, and problem gambling. *Psychology of Addictive Behaviors*, 23, 295-302.

- Holtgraves, T. (2009b). Evaluating the Problem Gambling Severity Index. *Journal of Gambling Studies*, 25, 105-120.
- Horswill, M., & Coster, M. (2001). User-controlled photographic animations, photograph-based questions and questionnaires: three instruments for measuring drivers' risk-taking behaviour on the internet. *Behaviour Research Methods, Instruments and Computers* 33, 46-58.
- Howe, K. (1992). Getting over the quantitative-qualitative debate. *American Journal of Education*, 100, 236-256.
- Huang, J., Jacobs, D., Derevensky, J., Gupta, R. & Paskus, T., (2007). Gambling and health risk behaviors among US college student-athletes: Findings from a national study. *Journal of Adolescent Health*, 40, 390-397.
- Hussain, Z., & Griffiths, M. (2008). Gender swapping and socializing in Cyberspace: An exploratory study. *Cyberpsychology and Behaviour*, 11, 47-53.
- Ialomiteanu, A., & Adlaf, E. (2001). Internet gambling among Ontario adults. *Electronic Journal of Gambling Issues* [online], 5, 12/02/08. Available at: http://www.camh.net/egambling/issue5/research/ialomiteanu_adlaf_article.html.
- Internet World Stats (2010). Located at: <http://www.internetworldstats.com/eu/uk.htm> (Last accessed 6 October, 2010).
- Ipsos Reid, (2005). *Online Poker in North America: A syndicated study*. Accessed September 4, 2009 http://www.ipsos.ca/pdf/Ipsos_OnlinePoker.pdf
- Jacobs, D. (1986). A general theory of addictions: A new theoretical model. *Journal of Gambling Studies*, 2, 15-31.
- Jacobs, D. (1988). Evidence for a common dissociative-like reaction among addicts. *Journal of Gambling Studies*, 4, 27-37.
- Jacques, C., Ladouceur, R., & Ferland, F. (2000). The impact of availability on gambling: A longitudinal study. *Canadian Journal of Psychiatry*, 45, 810-815.
- Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, 24, 602-611.

- Johansson, A., Grant, J.E., Kim, S.W., Odlaug, B.L., & Gotestam, K. (2009). Risk factors for problematic gambling: A critical literature review. *Journal of Gambling Studies*, 25, 67-92.
- Johnson, R., & Onwuegbuzie, A. (2004). Mixed Methods Research: A research paradigm whose time has come. *Educational Researcher*, 33, 14-26.
- Joukador, J., Blaszczynski, A., & Maccallum, F. (2004). Superstitious beliefs in gambling among problem and non-problem gamblers: Preliminary data. *Journal of Gambling Studies*, 20, 171-180.
- Joukador, J., Maccallum, F., & Blaszczynski, A. (2003). Differences in cognitive distortions between problem and social gamblers. *Psychological Reports*, 92 (3 Pt 2), 1203-1214.
- Kassinove, J., Doyle, K., & Milburn, N. (2000). Gambling and alcohol use in adolescence. *Journal of Social Behavior and Personality*, 15, 51-66.
- Kassinove, J., & Schare, M. (2001). Effects of the 'Near Miss' and the 'Big Win' on Persistence at Slot Machine Gambling. *Psychology of Addictive Behaviors*, 15, 155-158.
- Kassinove, J., Tsytsarev, S., & Davidson, I. (1998). Russian attitudes towards gambling. *Personality and Individual Differences*, 24, 41-46.
- Kavanagh J., Trouton A., Oakley A., & Harden A. (2005). *A Scoping Review of the Evidence for Incentive Schemes to Encourage Positive Health and Other Social Behaviors in Young People*. London: EPPI-Centre, Social Science Research Unit, Institute of Education.
- Kessler, R.C., Hwang, I., LaBrie, R., Petukhova, M., Sampson, N.A., Winters, K.C., et al. (2008). The prevalence and correlates of DSM-IV pathological gambling in the national comorbidity survey replication. *Psychological Medicine*, 38, 1351-1360.
- Korn, D., & Shaffer, H. (1999). Gambling and the Health of the Public: Adopting a Public Health Perspective. *Journal of Gambling Studies*, 15, 289-365.
- Krantz, J., & Dalal, R. (2000). Validity of web-based psychological research. In M. H. Birnbaum (ed.), *Psychology experiments on the internet* (pp.35-60). San Diego, CA: Academic Press.

- Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J. & Crouper, M. (2004). Psychological research online: report of the scientific affairs' advisory group on the conduct of research on the Internet. *American Psychologist* 59, 105-117.
- LaBrie, R., Kaplan, S., LaPlante, D., Nelson, S., & Shaffer, H. (2008). Inside the virtual casino: A prospective longitudinal study of internet casino gambling. *European Journal of Public Health*, 18, 410-416.
- LaBrie, R., LaPlante, D., Nelson, S., Schumann, A., & Shaffer, H. (2007). Assessing the playing field: A prospective longitudinal study of Internet sports gambling behaviour. *Journal of Gambling Studies*, 23, 231-243.
- Ladd, G., & Petry, N. (2002a). Gender differences among pathological gamblers seeking treatment. *Experimental and Clinical Psychopharmacology*, 10, 302-309.
- Ladd, G., & Petry, N. (2002b). Disordered gambling among university-based medical and dental patients: A focus on Internet gambling. *Psychology of Addictive Behaviors*, 16, 76-79.
- Ladouceur, R., Gadboury, A., Dumont, M., & Rochette, P. (1988). Gambling: Relationship between frequency of wins and irrational thinking. *Journal of Psychology*, 122, 409-414.
- Ladouceur, R. & Mayrand, M. (1987). The level of involvement and the timing of betting in roulette. *Journal of Psychology*, 121, 169-176.
- Ladouceur, R., & Sevigny, S. (2002). Symbols presentation modality as a determinant of gambling behavior. *The Journal of Psychology*, 136, 443-448.
- Ladouceur, R., Sevigny, S., Blaszczynski, A., O'Connor, K. & Lavoie, M. (2003). Video lottery: winning expectancies and arousal. *Addiction*, 98, 733-738.
- Lahn, J. (2005). Gambling among offenders: results from an Australian survey. *International Journal of Offender Therapy and Comparative Criminology*, 49, 343-355.
- Langer, E. (1975). The illusion of control. *Journal of Personality and Social Psychology*, 32, 311-328.
- Langer, E., & Roth, J. (1975). Heads I win, tails it's chance: The illusion of control as a function of the sequence of outcomes in a purely chance task. *Journal of Personality and Social Psychology*, 32, 951-955.

LaPlante, D., Kleschinsky, J., LaBrie, R., Nelson, S., & Shaffer, H. (2009). Sitting at the virtual poker table: A prospective epidemiological study of actual internet poker gambling behaviour. *Computers in Human Behaviour*, 25, 711-717.

LaPlante, D., Nelson, S., LaBrie, R., & Shaffer, H. (2006). Men and women playing games: gender and the gambling preferences of Iowa gambling treatment program participants. *Journal of gambling studies*, 22, 65-80.

LaPlante, D., Nelson, S., LaBrie, R., & Shaffer, H. (2009). Disordered gambling, type of gambling and gambling involvement in the British Gambling Prevalence Survey 2007. *The European Journal of Public Health*, 1-6.

LaPlante, D., & Shaffer, H. (2007). Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation. *American Journal of Orthopsychiatry*, 77, 616-623.

Lapuz, J., & Griffiths, M. (2010). The role of chips in poker gambling: An empirical pilot study. *Gambling Research Volume*, 22, 34-39.

Lee, H., Lemanski, J., & Jun, J. (2008). Role of gambling media exposure in influencing trajectories among college students. *Journal of Gambling Studies*, 24, 25-37.

Lesieur, H. (1979). The Compulsive Gambler's Spiral of Options and Involvement. *Psychiatry*, 42, 79-87.

Lesieur, H. (1987). Gambling, pathological gambling and crime. In *The Handbook of Pathological Gambling*, ed. T Galski. Springfield IL: Charles C. Thomas

Lesieur, H. R. (1992). Compulsive gambling. *Society*, 29, 43-50.

Lesieur, H. (1998). Costs and treatment of pathological gambling. *The Annals of the American Academy of Political and Social Science*, 556, 153-71

Lesieur, H., & Blume, S. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *The American Journal of Psychiatry*, 144, 1184-1188.

Lesieur H., Blume S., & Zoppa, R. (1986). Alcoholism, drug abuse and gambling. *Alcoholism: Clinical and Experimental Research* 10, 33-38.

- Lesieur, H., & Custer, R. (1984). Pathological Gambling: Roots, Phases and Treatment. *Annals of the American Academy of Political and Social Science*, 474, 146-156.
- Lesieur, H., & Rosenthal, R. (1991). Pathological gambling : A review of the literature (prepared for the American Psychiatric Association task force on DSM-IV committee on disorders of impulse control not elsewhere classified). *Journal of Gambling Studies*, 7, 5-39.
- Liu, T., Maciejewski, P., & Potenza, M. (2009). The relationship between recreational gambling and substance abuse/dependence: Data from a nationally representative sample. *Drug and Alcohol Dependence*, 100, 164-168.
- Livingstone, C., Woolley, R., Zazryn, T. (2008). *The relevance and role of gaming machine games and game features on the play of problem gamblers*. Independent Gambling Authority, South Australia.
- Lloyd, J., Doll, H., Hawton, K., Dutton, W., Geddes, J., Goodwin, G., Rogers, R. (2010). Internet gamblers: A latent class analysis of their behaviours and health experiences. *Journal of Gambling Studies*, 26, 387-399.
- Lovato, C., Linn, G., Stead, L., & Best, A. (2003). Impact of tobacco advertising and promotion on increasing adolescent smoking behaviour. *Cochrane Database Systematic Review*, 4.
- Macorr Inc, (2009). Accessed at http://www.macorr.com/internet_surveys.htm on 23rd September 2009.
- Mahatanankoon, P., Wen, H.J., & Lim, B. (2005). Consumer-based m-commerce: exploring consumer perception of mobile applications. *Computer Standards & Interfaces*, 27, 347-357.
- Malkin, D., & Syme, G.J. (1986). Personality and problem gambling. *International Journal of the Addictions*, 21, 267-272.
- Marshall, K. (1998). The gambling industry: raising the stakes. *Perspectives on Labour and Income*, 10, 7–11.
- Mays, N. & Pope, C. (1996). *Qualitative research in health care*. London: BMJ.

- Mays, N., Roberts, E. & Popay, J. (2001). Synthesising research evidence. In N. Fulop, P. Allen, A. Clarke & N. Black (Eds.), *Studying the organisation and delivery of health services: Research methods*, pp. 188-215. London: Routledge.
- McBride, J., & Derevensky, J. (2009). Internet gambling behaviour in a sample of online gamblers. *International Journal of Mental Health and Addiction*, 7, 149-167.
- McCleary, R., Chew, K., Feng, W., Merrill, V., Napolitano, C, *et al.*, (1998). *Suicide and Gambling: An Analysis of Suicide Rates in U.S. Counties and Metropolitan Areas*.
- McCormick, R., Russo, A., Ramirez, L., & Taber, J. (1984). Affective disorders among pathological gamblers seeking treatment. *American Journal of Psychiatry*, 141, 215–18.
- McCracken, G. (1988). *The Long Interview*. Thousand Oaks, CA: Sage.
- McMillen, J. (2000). Online Gambling: Challenges to National Sovereignty and Regulation. *Prometheus*, 18, 391-401.
- McMullan, J., & Miller, D. (2009). Wins, winning and winners: The commercial advertising of lottery gambling. *Journal of Gambling Studies*, 25, 273-295.
- McNeilly, D., & Burke, W. (2001). Gambling as a social activity of older adults. *International Journal of Aging and Human Development*, 52, 19-28.
- McNeilly, D., & Burke, W. (2002). Disposable Time and Disposable Income: Problem Casino Gambling Behavior in Older Adults. *Journal of Clinical Geropsychology*, 8, 75-86.
- McQueen, R., & Knussen, C. (2006). *Introduction to research methods and statistics in psychology*. Pearson, Prentice Hall.
- Mercier, P., & Barwise, P. (2004). *Digital Television in the UK: Consumer responses to interactivity*. London Business School.
- Mercer, K., & Eastwood, J. (2010). Is boredom associated with problem gambling behaviour? It depends on what you mean by ‘boredom’. *International Gambling Studies*, 10, 91-104.
- Messerlian, C., Byrne, A., & Derevensky, J. (2004). Gambling, youth and the Internet: Should we be concerned? *Canadian Child and Adolescent Psychiatry Review*, 13, 3-6.

- Meyer, G. (1997). *Pathological gambling and criminal behaviour*. Presented at the 10th International Conference on Gambling and Risk-Taking. Montreal.
- Mitka, M. (2001). Win or Lose, Internet Gambling Stakes Are High. *Journal of the American Medical Association*, 285, 1005.
- Milliman, R. (1982). Using background music to affect the behaviour of supermarket shoppers. *Journal of Marketing*, 46, 86-91.
- Milliman, R. (1986). The influence of background music on the behaviour of restaurant patrons. *Journal of Consumer Research*, 13, 286-289.
- Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1990). *Indepth Interviewing. Researching People*. Longman, Cheshire, Melbourne.
- Monaghan, S. (2008). *Internet and wireless gambling – A current profile*. Report to the Australasian Gaming Council. University of Sydney, Sydney.
- Monaghan, S. (2009). *A critical review of the impact of internet gambling*. Report to the Australasian Gaming Council. University of Sydney, Sydney.
- Monaghan, S., Blaszczynski, A., & Nower, L. (2009). Consequences of winning: The role of gambling outcomes in the development of irrational beliefs. *Behavioural and Cognitive Psychotherapy*, 37, 49-59.
- Moore, T. (2001). *The prevalence of disordered gambling among adults in Oregon: Asecondary analysis of data*. Salen, OR: Oregon Gambling Addiction Treatment Foundation.
- Moore, T. (2006). *The prevalence of disordered gambling among adults in Oregon: Areplication study*. Portland, OR: Oregon Gambling Addiction Treatment Foundation.
- Moore, S.M., & Ohtsuka, K. (1999). Beliefs about control over gambling among young people, and their relation to problem gambling. *Psychology of Addictive Behaviors*, 13, 339-347.
- Moran, E. (1970). Varieties of pathological gambling. *The British Journal of Psychiatry*, 116, 593-597.
- Morasco, B., & Petry, N. (2006). Gambling problems and health functioning in individuals receiving disability. *Disability and Rehabilitation*, 28, 619-623.

Morasco, B., vom Eigen, K., & Petry, N. (2006). Severity of gambling is associated with physical and emotional health in urban primary care patients. *General Hospital Psychiatry*, 28, 94-100.

Moreno, I., Saiz-Ruiz, J., & Lopez-Ibor, J. (1991). Serotonin and gambling dependence. *Human Psychopharmacology: Clinical and Experimental*, 6 (S1), S9-S12.

MORI Social Research Institute, (2006). *Under 16's and the National Lottery*. National Lottery Commission.

Morgan, D. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8, 362-376.

Morgan, D. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1, 48-76.

Murray, B. L. (2003). Qualitative research interviews: therapeutic benefits for the participants. *Journal of Psychiatric and Mental Health Nursing*, 10, 231-238.

Musch, J., & Reips, U.D. (2000). A brief history of web experimenting. In: Birnbaum, M.H., ed. *Psychological experiments on the internet*. San Diego: Academic Press, 2000, 61-87.

Mysreth, H., Pallesen, S., Molde, H., Johnsen, B. & Lorvik, I.M. (2009). Personality factors as predictors of pathological gambling. *Personality and Individual Differences*, 47, 933-937.

National Research Council, (1999). *Pathological Gambling: A Critical Review*. Washington, D.C: National Academy Press.

Niemz, K., Griffiths, M., & Banyard, P. (2005). Prevalence of Pathological Internet Use among University Students and Correlations with Self-Esteem, the General Health Questionnaire (GHQ), and Disinhibition. *CyberPsychology & Behavior*, 8, 562-570.

Nixon, G., Solowoniuk, J., Hagen, B., & Williams, J. (2005). "Double trouble": The lived experience of problem and pathological gambling in later life. *Journal of Gambling Issues*, 14.

Nower, L., & Blaszczynski, A. (2006). Impulsivity and pathological gambling: A descriptive model. *International Gambling Studies*, 6, 61-75.

Nower, L., Derevensky, J., & Gupta, R. (2004). The relationship of impulsivity, sensation seeking, coping and substance use in youth gamblers. *Psychology of Addictive Behaviors, 18*, 49-55.

Office for National Statistics (2010). Located at: <http://www.statistics.gov.uk/cci/nugget.asp?id=8> (Last accessed 6 October, 2010).

Oliveira, M., & Silva, M. (2001). A comparison of horse-race, bingo, and video poker gamblers in Brazilian gambling settings. *Journal of gambling studies, 17*, 137-149.

Online casino city (2010). *Online casino and gambling guide*. Located at: <http://online.casinocity.com/> Last accessed (29 March, 2010).

Orford, J. (2001). *Excessive appetites: A psychological view of addictions*. Chichester: Wiley.

Orford, J., Sproston, K., Erens, B., White, C., & Mitchell, L. (2003). *Gambling and problem gambling in Britain*, London: Brunner-Routledge.

Orford, J., Griffiths, M., Wardle, H., Sproston, K., & Erens, B. (2009). Negative public attitudes towards gambling: findings from the 2007 British Gambling Prevalence Survey using a new attitude scale. *International Gambling Studies, 9*, 39-54.

Orford, J., Wardle, H., Griffiths, M., Sproston, K., & Erens, B. (2010). PGSI and DSM-IV in the 2007 British Gambling Prevalence Survey: reliability, item response, factor structure and inter-scale agreement. *International Gambling Studies, 10*, 31-44.

Ormel, J., Vonkorff, M., Ustun, T.B., Pini, S., Korten, A., Olde-Hinkel, T. (1994). Common mental disorders and disability across cultures. Results from the WHO Collaborative Study on psychological problems in general health care. *Journal of the American Medical Association, 272*, 1741-1748.

Pantalon, M., Maciejewski, P., Desai, R. & Potenza, M. (2008). Excitement seeking gambling in a nationally representative sample of recreational gamblers. *Journal of Gambling Studies, 24*, 63-78.

Parke, J., & Griffiths, M. (2004a). Gambling Addiction and the Evolution of the 'Near Miss'. *Addiction Research and Theory, 12*, 407-411.

Parke, A., & Griffiths, M. (2004b). Why Internet Gambling Prohibition Will Ultimately Fail. *Gaming Law Review, 8*, 297-301.

- Parke, J., & Griffiths, M. (2006). The Psychology of the Fruit Machine: The Role of Structural Characteristics (Revisited). *International Journal of Mental Health Addiction*, 4, 151-179.
- Parke, J., & Griffiths, M. (2007). The Role of Structural Characteristics in Gambling. In: Smith, G., Hodgins, D.C., and Williams, R.J., eds., *Research and Measurement Issues in Gambling Studies*. Elsevier, Academic Press, 2007, pp. 217-249.
- Parke, A., Griffiths, M., & Irwing, P. (2004). Personality traits in pathological gambling: Sensation seeking, deferment of gratification and competitiveness as risk factors. *Addiction Research and Therapy*, 12, 201-212.
- Parke, A., Griffiths, M., & Parke, J. (2005). Can playing poker be good for you? Poker as a transferable skill. *Journal of Gambling Issues*, 14.
- Parke, J., Griffiths, M., & Parke, A. (2007). Positive thinking among slot machine gamblers: A case of maladaptive coping. *International Journal of Mental Health Addiction*, 5, 39-52.
- Parke, J., Rigbye, J., Parke, A., & Williams, L. (2007). *An exploratory investigation into the attitudes and behaviours of Internet casino and poker players*. ECOGRA Global Online Gambler Report.
- Parker, I. (2005). *Qualitative psychology introducing radical research*. Maidenhead: Open University Press.
- Pasternak, A. & Fleming, M. (1999). Prevalence of gambling disorders in a primary care setting. *Archives of Family Medicine*, 8, 515-520.
- Peller, A., LaPlante, D., & Shaffer, H. (2008). Parameters for safer gambling behaviour: Examining the empirical research. *Journal of Gambling Studies*, 24, 519-534.
- Petry, N. (2001). Pathological gamblers, with and without substance use disorders, discount delayed rewards at high rates. *Journal of Abnormal Psychology* 110, 482-487.
- Petry, N. (2003). A comparison of treatment-seeking pathological gamblers based on preferred gambling activity. *Addiction*, 58, 645-655.
- Petry, N. (2004). *Pathological gambling: Etiology, comorbidity and treatment*. Washington, DC.: American Psychological Association.

- Petry, N. (2006). Internet gambling: An emerging concern in family practice medicine? *Family practice, 23*, 421-426.
- Petry, N., & Armentano, C. (1999). Prevalence, assessment, and treatment of pathological gambling: a review. *Psychiatric Services, 50*, 1021-1027.
- Petry, N. & Casarella, T. (1999). Excessive discounting of delayed rewards in substance abusers with gambling problems. *Drug and Alcohol Dependence 56*, 25-32.
- Petry, N., & Kiluk, B. (2002). Suicidal ideation and suicide attempts in treatment-seeking pathological gamblers. *Journal of Nervous and Mental Disease, 190*, 462-469.
- Petry, N., Stinson, F., & Grant, B. (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.
- Pidgeon, N. (1996). Grounded theory: theoretical background. In John, T.E. Richardson, *Handbook of qualitative research methods for psychology and the social sciences*. Leicester, BPS.
- Pidgeon, N., & Henwood, K. (1997). Using Grounded theory in psychological research. In N. Hayes. *Doing qualitative analysis in psychology*. Erlbaum, Psychology Press.
- Pietrzak, R., Molina, C., Ladd, G., Kerins, G., & Petry, N. (2005). Health and psychosocial correlates of disordered gambling in older adults. *American Journal of Geriatric Psychiatry, 13*, 510-519.
- Potenza, M., Kosten, T., & Rounsaville, B. (2001). Pathological gambling. *The Journal of the American Medical Association, 286*, 141-144.
- Potenza, M., Steinberg, M., McLaughlin, S., Wu, R., Rounsaville, B. & O'Malley, S. (2001). Gender-related differences in the characteristics of problem gamblers using a gambling helpline. *American Journal of Psychiatry, 158*, 1500-1505.
- Preston, F., Bernhard, B., Hunter, R., & Bybee, S. (1998). Gambling as Stigmatized Behavior: Regional Relabeling and the Law. *Annals of the American Academy of Political and Social Science, 556*, 186-196.
- Pugh, P., & Webley, P., (2000). Adolescent participation in the U.K. National Lottery games. *Journal of Adolescence, 23*, 1-11.

- Raylu, N., & Oei, T. (2002). Pathological gambling: *A comprehensive review*. *Clinical Psychology Review, 22*, 1009-1061.
- Reid, R. (1986). The psychology of the near miss. *Journal of Gambling Behaviour, 2*, 32-39.
- Reips, U-D. (2000). The web experiment method: advantages, disadvantages and solutions. In M. H. Birnbaum (ed.), *Psychological experiments on the internet* (pp.89-114). San Diego, CA: Academic Press.
- Reips, U-D. (2002). Standards for internet-based experimenting. *Experimental Psychology, 49*, 243-256.
- Reips, U-D. (2007). The methodology of internet based experiments. In Joinson, A., McKenna, K., Postmes, T., & Reips, U-D. (2007). *The Oxford handbook of internet psychology*. Oxford University Press.
- Rockloff, M., & Dyer, V. (2007). An experiment on the social facilitation of gambling behaviour. *Journal of Gambling Studies, 23*, 1-12.
- Rogers, P. (1998). The cognitive psychology of lottery gambling: A theoretical review. *Journal of Gambling Studies, 14*, 111-133.
- Rogers, P., & Webley, P. (2001). "It could be us!": Cognitive and social psychological factors in UK National Lottery Play. *Applied Psychology: An International Review, 50*, 181-199.
- Roney, C., & Trick, L. (2003). Grouping and gambling: A gestalt approach to understanding the gambler's fallacy. *Canadian Journal of Experimental Psychology, 57*, 69-75.
- Rosenthal, R.J., & Rugle, L.J. (1994). A psychodynamic approach to the treatment of pathological gambling: Part 1. Achieving abstinence. *Journal of Gambling Studies, 10*, 21-42.
- Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*, Whole No. 609: 1-28.
- Roy, A., Custer, R., Lorenz, V. & Linnoila, M. (1989). Personality factors and pathological gambling. *Acta Psychiatrica Scandinavica, 80*, 37-39.

Rugle, L. (2004). Chasing – It's not just about the money: Clinical reflections. *The Electronic Journal of Gambling Issues*, 10. Accessed November 2009 at http://www.camh.net/egambling/issue10/ejgi_10_rugle.html

Schellinck, T., & Schrans, T. (2002). *Atlantic Lottery Corporation Video Lottery Responsible Gaming Feature Research: Final Report*. Moncton, New Brunswick: Atlantic Lottery Corporation and Focal Research.

Schmidt, W. (1997). World-wide web survey research: benefits, potential problems and solutions. *Behaviour Research Methods, Instruments and Computers* 29, 274-279.

Schuman, H. (1992). Context effects: state of the past/state of the art. In N. Schwarz and S. Sudman (eds), *Context effects in social and psychological research* (pp. 5-20). New York: Springer-Verlag.

Schuman, H., & Presser, S. (1981). *Questions and answers in attitude surveys: experiments on question form, wording and context*. New York: Academic Press.

Schwarz, N. & Bless, H. (1992). Scandals and public trust in politicians: assimilation and contrast effects. *Personality and Social Psychology Bulletin* 18, 574-579.

Schwarz, N. & Clore, G. L. (1983). Mood, misattribution and judgments of well-being: informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-523.

Sevigny, S., Cloutier, M., Pelletier, M., Ladouceur, R. (2005). Internet gambling: Misleading payout rates during the "demo" period. *Computers in Human Behaviour*, 21, 153-158.

Shaffer, H. (2003). A Critical Review of Pathological Gambling and Addiction. In: G. Reith, ed., *Gambling: Who wins, who loses?* Prometheus books, 2003, pp. 175-189.

Shaffer, H. (2004). *Internet gambling and addiction*. Harvard Medical School. Division on Addictions.

Shaffer, H., & Korn, D. (2002). Gambling and Related Mental Disorders: A Public Health Analysis. *Annual Review of Public Health*, 23, 171-212.

Shaffer, H., LaBrie, R., LaPlante, D., Nelson, S., & Stanton, M. (2004). The road less traveled: Moving from distribution to determinants in the study of gambling epidemiology. *Canadian Journal of Psychiatry*, 49, 504-516.

- Shaffer, H., Stanton, M., & Nelson, S. (2006). Trends in gambling studies research: Quantifying, categorising, and describing citations. *Journal of Gambling Studies*, 22, 427-442.
- Shaffer, H., Vander, J., & Hall, M. (1999). Gambling, drinking, smoking and other health risk activities among casino employees. *American Journal of Industrial Medicine*, 36, 365-378.
- Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A biopsychosocial perspective. *Clinical Psychology Review*, 22, 1-25.
- Shewan, D., & Brown, R. (1993). The role of fixed interval conditioning in promoting involvement in off-course betting. In: Eadington, W.R. and Cornelius, J. eds., *Gambling behavior and problem gambling*. Nevada: Bureau of Business and Economic Research, College of Business Administration, University of Nevada: Reno, 1993, pp. 111-132.
- Silverman, D. (2000). *Doing qualitative research: A practical handbook*. Sage: London.
- Skinner, B., 1953. *Science and human behavior*. New York: The Free Press.
- Slutske, W., Caspi, A., & Moffitt, T. (2005). Personality and Problem Gambling: A Prospective Study of a Birth Cohort of Young Adults. *Archives of General Psychiatry*, 62, 769-775.
- Slutske, W., Zhu, G., Meier, M., & Martin, N. (2010). Genetic and environmental influences on disordered gambling in men and women. *Archives of General Psychiatry*, 67, 624-630.
- Smeaton, M., & Griffiths, M. (2004). Internet gambling and social responsibility: An exploratory study. *CyberPsychology & Behavior*, 7, 49-57.
- Smith, J. (2003). Introduction. In J. Smith (Eds.) *Qualitative psychology: A practical guide to research methods*. Thousand Oaks, London: Sage.
- Smith, J., & Abt, V. (1984). Gambling as Play. *Annals of the American Academy of Political and Social Science*, 747, 122-132.
- Smyth, J., Dillman, D., & Christian, L. (2007). Context effects in internet surveys: New issues and evidence. In Joinson, A., McKenna, K., Postmes, T., & Reips, U-D. (2007). *The oxford handbook of internet psychology*. Oxford University Press.

Smyth, J., Dillman, D., Christian, L. & Stern, M. (2006). Effects of using visual design principles to group response options in web surveys. *International Journal of Internet Science I*, 6-16.

South Australian Department of Human Services, (2001). *Gambling patterns of South Australians and associated health indicators*. Epidemiology Branch. Adelaide: South Australian Department of Human Services.

Southwell, J., Boreham, P., Laffan, W. (2008). Problem gambling and the circumstances facing older people: A study of gaming machine players aged 60+ in licensed clubs. *Journal of Gambling Studies*, 24, 151-174.

Spennwyn, J., Barrett, D. & Griffiths, M. (2010). The role of lights and music in gambling behavior: An empirical pilot study. *International Journal of Mental Health and Addiction*, 8, 107-118.

Sproston, K., Erens, B., & Orford, J. (2000). *Gambling behaviour in Britain: Results from the British Prevalence Survey*. London: National Centre For Social Research.

Stalker, K., Davidson, J., MacDonald, C. & Innes, A. (2006). *A scoping study on the needs of, and services to, younger disabled people including those with early onset dementia in Scotland*. Scottish Executive Social Research. Social Work Research Centre, Department of Applied Social Science, University of Stirling.

Start Casino, (2010). Located at: <http://www.startcasino.com/> (Last accessed 5 October, 2010).

Steele, C., Kalnins, I., Rossen, B., Biggar, D., Bortolussi, J., Jutai, J. (2004). Age-related health risk behaviours of adolescents with physical disabilities. *Sozial-und Praventivmedizin*, 49, 132-141.

Steenbergh, T., Whelan, J., Meyers, A., May, R., & Floyd, K. (2004). Impact of warning and brief intervention messages on knowledge of gambling risk, irrational beliefs and behavior. *International Gambling Studies*, 4, 3-16.

Ste-Marie, C., Gupta, R., & Derevensky, J. (2006). Anxiety and social stress related to adolescent gambling behavior and substance use. *Journal of Child & Adolescent Substance Abuse*, 15, 55-74.

- Stewart, D. (2006). An analysis of Internet Gambling and its policy implications. *American Gaming Association*.
- Stinchfield, R. (2003). Reliability, validity, and classification accuracy of a measure of DSM-IV diagnostic criteria for pathological gambling. *American Journal of Psychiatry*, *160*, 180-182.
- Strauss, A., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. London: Sage
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing Grounded theory*. Thousand Oaks, Ca: Sage.
- Strickland, L. H., & Grote, F. W. (1967). Temporal presentation of winning symbols and slot machine playing. *Journal of Experimental Psychology*, *74*, 10-13.
- Sudman, S., Bradburn, N. and Schwarz, N. (1996). *Thinking about answers*. San Francisco, CA: Josey-Bass.
- Taber, J., McCormick, R., & Ramirez, L. (1987). The prevalence and impact of major life stressors among pathological gamblers. *International Journal of the Addictions*, *22*, 44-48.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Tavares, H., Zilberman, M., Beites, F., & Gentil, V. (2001). Gender differences in gambling progression. *Journal of Gambling Studies*, *17*, 151-159.
- Taylor, S., (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*, 1161-1173.
- Taylor, S., & Brown, J. (1988). Illusion and well being: A social psychological perspective on health. *Psychological Bulletin*, *103*, 193-210.
- Teo, P., Mythily, S., Anantha, S. & Winslow, M. (2007). Demographic and clinical features of 150 pathological gamblers referred to a community addictions programme. *Annals Academy of Medicine Singapore*, *36*, 165-168.
- Toce-Gerstein, M., Gerstein, D., & Volberg, R. (2003). A hierarchy of gambling disorders in the community. *Addiction*, *98*, 1661-1672.

- Toneatto, T., Blitz-Miller, T., Calderwood, K., Dragonetti, R. & Tsanos, A. (1997). Cognitive distortions in heavy gambling. *Journal of Gambling Studies*, 13, 253-266.
- Toneatto, T., & Nguyen, L. (2007). Individual characteristics and problem gambling behavior. In: Smith, G., Hodgins, D.C., and Williams, R.J. eds., *Research and measurement issues in gambling studies*. Academic Press, Elsevier, 2007, pp. 279-303.
- Toneatto, T., Skinner, W., & Dragonetti, R. (2002). Patterns of Substance Use in Treatment-Seeking Problem Gamblers: Impact on Treatment Outcomes. *Journal of Clinical Psychology*, 58, 853-859.
- Tourangeau, R., Couper, M., & Conrad, F. (2004). Spacing, position and order: interpretive heuristics for visual features of survey questions. *Public Opinion Quarterly* 68, 368-393.
- Tourangeau, R., Rasinski, K., Bradburn, N & D'Andrade, R. (1989). Carry-over effects in attitude surveys. *Public Opinion Quarterly* 53, 495-524.
- Turner, R. (1981). Social support as a contingency in psychological well-being. *Journal of Health and Social Behaviour*, 22, 357-367.
- Turner, N., Zangeneh, M., & Littman-Sharp, N. (2006). The experience of gambling and its role in problem gambling. *International Gambling Studies*, 6, 237-266.
- Vander-Bilt, J., Dodge, H., Pandav, R., Shaffer, H. & Ganguli, M. (2004). Gambling participation and social support among older adults: a longitudinal community study. *Journal of Gambling Studies*, 20, 373-390.
- Vitaro, F., Arseneault, L., & Tremblay, R. (1997). Dispositional predictors of problem gambling in male adolescents. *American Journal of Psychiatry*, 154, 12.
- Volberg, R. (1996). Prevalence studies of problem gambling in the United States. *Journal of Gambling Studies*, 12, 111-128.
- Volberg, R. (1999). *Gambling and problem gambling in Oregon*. Report prepared for the Oregon Gambling Addiction Treatment Foundation.
- Volberg, R., Abbott, M., Ronnberg, S., Munck, I. (2001). Prevalence and risks of pathological gambling in Sweden. *Acta Psychiatrica Scandinavica*, 104, 250-256.

- Wagenaar, W. (1988). *Paradoxes of gambling behaviour*. London: Lawrence Erlbaum Associates.
- Walker, M. (1992). *The Psychology of Gambling*. New York: Permagon.
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, Interpersonal and hyperpersonal interaction. *Communication Research*, 23, 3–43.
- Wang, Z., & Aquino, H. (2002). Casino technology: Player tracking and slot accounting. *Gaming Research and Review Journal*, 6, 43-56.
- Wardle, H., Moody, A., Spence, S., Orford, J., Volber, R., Jotangia, D., Griffiths, M., Hussey, D., & Dobbie, F. (2010). *British Gambling Prevalence Survey, 2010*.
- Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M., Constantine, R. & Piggot, S., (2007). *British Gambling Prevalence Survey 2007*.
- Watson, S., Liddell, P., Moore, R., & Eshee, W. (2004). The legalisation of Internet gambling: A consumer protection perspective. *Journal of Public Policy and Marketing*, 23, 209-213.
- Weiner, B., (1974). *Achievement, motivation and attribution theory*. Morristown, N.J.: General Learning Press.
- Weinstein, N. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, 806-820.
- Weinstein, N. (1989). Optimistic biases about personal risk. *Science*, 246, 1232-1233.
- Welte, J., Barnes, G., & Hoffman, J. (2004). Gambling, substance use, and other problem behaviors among youth: A test of general deviance models. *Journal of Criminal Justice*, 32, 297-306.
- Welte, J.W., Barnes, G.,M., Wieczorek, W.F., Tidwell, C., & Parker, J. (2002). Gambling participation in the U.S. – Results from a National Survey. *Journal of Gambling Studies*, 18, 313-337.
- Welte, J., Barnes, G., Wieczorek, W., Tidwell, M., & Parker, J. (2004). Risk factors for pathological gambling. *Addictive Behaviors*, 29, 323-335.
- Wengraf, T. (2001). *Qualitative Research Interviewing: biographic, narrative and semi-structured methods*. London: Sage

- Wenzel, H., & Dahl, A. (2008). Female pathological gamblers – A critical review of the clinical findings. *International Journal of Mental Health and Addiction*, 7, 190-202.
- Whitty, M. (2004). Peering into online bedroom windows: Considering the ethical implications of investigating internet relationships and sexuality. In E. Buchanan (Ed.), *Readings in Virtual Research Ethics: Issues and Controversies* (pp. 203-218). Hershey, USA: Idea Group Inc.
- Wieland, D., (2005). Computer addiction: Implications for nursing psychotherapy practice. *Perspectives in Psychiatric Care*, 41, 153-161.
- Williams, R., Royston, J., & Hagen, B. (2005). Gambling and problem gambling within forensic populations: a review of the literature. *Criminal Justice Behaviour*, 32, 665-689.
- Willig, C. (2008). *Introducing qualitative research in psychology, (2nd Ed)*. Open University Press.
- Wilson, S. (2003). The effect of music on perceived atmosphere and purchase intentions in a restaurant. *Psychology of Music*, 31, 93-112
- Wohl, M., Young, M., & Hart, K. (2005). Untreated young gamblers with game-specific problems: Self-concept involving luck, gambling ecology and delay in seeking professional treatment. *Addiction Research and Theory*, 13, 445-459.
- Wood, R., & Griffiths, M. (1998). The acquisition, development and maintenance of lottery and scratchcard gambling in adolescence. *Journal of Adolescence*, 21, 265-273.
- Wood, R., & Griffiths, M. (2002). Adolescent perceptions of the National Lottery and scratchcards: a qualitative study using group interviews. *Journal of Adolescence*, 25, 655-668.
- Wood, R., & Griffiths, M. (2004). Adolescent lottery and scratchcard players: do their attitudes influence their gambling behaviour? *Journal of Adolescence*, 27, 465-475.
- Wood, R., & Griffiths, M. (2007a). A qualitative investigation of problem gambling as an escape-based coping strategy. *Psychology and Psychotherapy: Theory, Research and Practice*, 80, 107-125.
- Wood, R., & Griffiths, M. (2007b). Online data collection from gamblers: Methodological issues. *International Journal of Mental Health and Addiction*, 5, 151-163.

Wood, R., & Griffiths, M. (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., Griffiths, M., Chappell, D., Davies, M., (2004). The structural characteristics of video games: A psycho-structural analysis. *CyberPsychology & Behavior, 7*, 1-10.

Wood, R., Griffiths, M., & Parke, J., (2007a). Acquisition, development and maintenance of online poker playing in a student sample. *CyberPsychology & Behavior, 10*, 354-361.

Wood, R., Griffiths, M., Parke, A., (2007b). Experiences of time loss among videogame players: An empirical study. *CyberPsychology & Behavior, 10*, 38-44.

Wood, R., Gupta, R., Derevensky, J., Griffiths, M., (2004). Video game playing and gambling in adolescents: Common risk factors. *Journal of Child & Adolescent Substance Abuse, 14*, 77-100.

Wood, R., & Williams, R. (2007a). Internet Gambling: Past, Present and Future. In: G. Smith, D.C. Hodgins, and R.J. Williams, eds., *Research and Measurement Issues in Gambling Studies*. Elsevier, 2007a.

Wood, R., & Williams, R., (2007b). Problem gambling on the Internet: Implications for Internet gambling policy in North America. *New Media & Society, 9*, 520-542.

Wood, R., & Williams, R. (2009). *Internet gambling: Prevalence, patterns, problems and policy options*. Final Report prepared for the Ontario Problem Gambling Research Centre. Guelph, Ontario, Canada. January 5, 2009.

Wood, R., Williams, R., & Lawton, P. (2007). Why do internet gamblers prefer online versus land-based venues? Some preliminary findings and implications. *Journal of Gambling Issues, 20*, 235-252.

Woodruff, C., & Gregory, S. (2005). Profile of Internet gamblers: betting on the future. *Gaming Research & Review Journal, 9*, 1-14.

Woolley, R. (2003). Mapping internet gambling: emerging modes of online participation in wagering and sports betting. *International Gambling Studies, 3*, 3-21.

Wyatt, J. (2000). When to use web-based surveys. *Journal of American Medical Information Association, 7*, 426-429.

- Wynne, H. (2003). *Introducing the Canadian Problem Gambling Index*. Edmonton, AB: Wynne Resources.
- Xian, H., Shah, K., Phillips, S., Scherrer, J., Volberg, R. & Eisen, S. (2008). Association of cognitive distortions with problem and pathological gambling in adult male twins. *Psychiatry Research* 160, 300-307.
- Yardley, L., & Bishop, F. (2008). Mixing qualitative and quantitative methods: A pragmatic approach. In C. Willig & W. Stainton Rogers, *The SAGE handbook of qualitative research*. London: Sage.
- Yeoman, T., & Griffiths, M., (1996). Adolescent machine gambling and crime. *Journal of Adolescence*, 19, 183-188.
- Young, M., Abu-Duhou, I., Barnes, T., Creed, E., Morris, M., Stevens, M., *et al.* (2006). *Northern Territory Gambling Prevalence Survey 2005*. Darwin: School for Social and Policy Research, Charles Darwin University.
- Young, M., & Stevens, M. (2009). Player preferences and social harm: An analysis of the relationships between player characteristics, gambling modes, and problem gambling. *International Journal of Mental Health and Addiction*, 7, 262-279.
- Young, M., Stevens, M., & Morris, M. (2008). Problem gambling within the non-Indigenous population of the Northern Territory of Australia: a multivariate analysis of risk factors. *International Gambling Studies* 8, 77-93.
- Zacharias, J. (2010). Internet gambling: Is it worth the risk? Located at: http://www.bcreponsiblegambling.ca/other/docs/internet_gambling_jan_zacharias.pdf (Last accessed August 25 2010).
- Zaraneck, R., & Lichtenberg, P., (2008). Urban elders and casino gambling: Are they at risk of a gambling problem? *Journal of Aging Studies*, 22, 13-23.
- Zuckerman, M., (1979). *Sensation Seeking: Beyond the Optimal Level of Arousal*. New York: Lawrence Erlbaum Associates.
- Zuckerman, M. (1983). *Biological basis of sensation seeking, impulsivity and anxiety*. Hillsdale, NJ: Erlbaum.

Appendix 1: List of Internet gambling websites visited (n = 70)

32 red (<http://www.32red.com>)
888 (<http://www.888.com>)
All jackpots (<http://www.alljackpots.com>)
Aspinalls (<http://www.aspinalls.com>)
Bet sage (<http://www.betsage.com>)
Bet UK (<http://www.betuk.com>)
Bingo hideout (<http://www.bingohideout.co.uk>)
Bingo street (<http://www.bingostreet.com>)
Blackjack ballroom (<http://www.blackjackballroom.com/>)
Blue square (<http://www.bluesq.com>)
Break away casino (<http://www.breakawaycasino.com>)
Cameo casino (<http://www.cameocasino.com>)
Casino (<http://casino.co.uk>)
Casino coinage (<http://www.casinocoinage.co.uk>)
Casino hotshots (<http://www.casinohotshots.com>)
Casino Playboy (<http://www.casinoplayboy.co.uk>)
Casino takeaway (<http://www.casinotakeaway.co.uk>)
Casino today (<http://www.casinotoday.co.uk>)
Casino tropez (<http://www.casinotropez.com>)
Classic Casinos (<http://www.classiccasinos.com>)
Doolallys (<http://www.doolallys.com>)
Dream bingo (<http://www.dreambingo.co.uk>)
English harbour (<http://www.englishharbour.co.uk>)
Exotic bingo (<http://www.exoticbingo.com>)
First web casino (<http://www.firstwebcasino.com>)
Foxy Bingo (<http://www.foxybingo.com>)
Gala bingo (<http://www.galabingo.com>)
Gambling directory (<http://www.gamblingdirectory.co.uk>)
Gambling planet (<http://www.gamblingplanet.org>)
Game account (<http://www.gameaccount.com>)
Golden casino (<http://www.goldencasino.com>)
Golden palace (<http://www.goldenpalace.com>)
Golden tiger casino (<http://www.goldentigercasino.com>)
Grosvenor casinos (<http://www.grosvenorcasinos.com>)
Inter casino (<http://www.intercasino.co.uk>)
Jackpot city (<http://www.jackpotcity.com>)
Jackpot joy (<http://www.jackpotjoy.com>)
Jackpot mania (<http://www.jackpotmania.co.uk>)
Just gambling (<http://www.justgambling.co.uk>)
Ladbrokes (<http://www.betting.ladbrokes.com>)
Ladbrokes casino (<http://casino.ladbrokes.com>)
Line gambling (<http://www.linegambling.com>)
Littlewoods casino (<http://littlewoodscasino.com>)
Lucky nugget (<http://www.luckynugget.com>)
Maharajah club (<http://www.maharajahclub.com>)
Mecca bingo (<http://www.meccabingo.com>)
National Lottery (<http://www.national-lottery.co.uk>)
Online gambling (<http://onlinegambling.co.uk>)
Party Poker (<http://partypoker.com>)
PKR Casino (<http://www.pkrcasino.com>)

Play get minted (<http://www.playgetminted.com>)
Plus lotto (<http://www.pluslotto.com>)
Prime scratchcards (<http://www.primescratchcards.co.uk>)
Rascagana (<http://www.rascagana.com/en>)
Red Hot Rummy (<http://www.redhotrummy.com>)
Riverbelle (<http://www.riverbelle.com>)
Roccocasino (<http://www.roccocasino.com>)
Ruby Casino (<http://www.rubycasino.org.uk>)
Scratch 2 cash (<http://www.scratch2cash.com>)
Scratchcards (<http://www.scratchcards.me.uk>)
Spin palace (<http://www.spinpalace.com/uk/>)
Sun bingo (<http://www.sunbingo.co.uk>)
Totesport (<http://www.totesport.com>)
Vegas red (<http://www.vegasred.com>)
VIP slots (<http://www.vipslots.com>)
Wass Online (<http://www.wassonline.com>)
Wild jack (<http://www.wildjack.com>)
William Hill (<http://www.willhill.com>)
World wide gamble (<http://www.worldwidegamble.com>)
Zodiac casino (<http://www.zodiaccasino.com>)

Appendix 2: Operational definition of the structural and situational characteristics

Structural characteristics

Characteristic	Description
(1) Event frequency	How fast a person can gamble, get the result, and gamble again
(2) Event duration	How long the activity lasts
(3) Free practise games	The ‘demo’, ‘practice’ or ‘free play’ mode found on many different online gambling sites
(4) Multi-game opportunity	Ability to play multiple games by same operator at the same time, applies mainly to online games
(5) Continuity of play	The extent to which the gambling can be continuous or has enforced breaks.
(6) Autoplay	Features where the game is automatically played on behalf of the player (usually on a slot machine)
(7) Bonus features	Features where the player believes they are getting something for nothing.
(8) Payment	How the payment to gamble is made (e.g., chips, cash, credits, bill acceptors, credit cards, accounts, etc.).
(9) Payout interval	The speed at which the player can get their winnings
(10) In-running betting	Option to place bet after betting event has commenced but not yet terminated
(11) Communication opportunities	The extent to which a player can communicate with other players.
(12) Multi-player competition	The extent to which the player perceives they are competing against others. Preferred by males
(13) Stake size	The extent to which a player can determine the stake size
(14) Time warnings	The use of time features within game (e.g. clock or some visual time representation and/ or regular time warnings (e.g., pop-up time warnings) to help prevent players from losing track of the time.
(15) Perceived skill/control	The skill needed to win in the game
(16) Winner information	Information about the number of winners on a gambling activity
(17) Player testimonials	Descriptions from “players” about the game (usually positive)
(18) Sound effects while gambling	The use of sound effects used when gambling (e.g., use of verbal interaction on a slot machine)
(19) Winning frequency	How often a player can win
(20)	Potential win size in comparison with stake size

Payout ratio	
(21) Information on responsible gambling	The dissemination of responsible gambling within game
(22) Losses warnings	Loss warnings are characteristics that refer to information about how much a player has lost during a particular play period. These warnings can help players keep track of their spending and may help minimise further gambling.
(23) Game complexity	May have implications for working out the probability of winning/losing
(24) Near miss opportunities	Failures that are close to being successful and may be deliberately manufactured by the operator
(25) Sequence of winning symbols	The sequence of winning symbols in games (e.g., the placement of more winning symbols on the first reel of a slot machine)
(26) Bet frequency	The number of bets or gambles placed in any given time period
(27) Colour effects	The use of colour to induce gambling.
(28) In-game music	The use of in-game music to induce gambling
(29) Pseudo-skill elements	Random games that suggest there is skill involved (e.g. nudge buttons, stopping device, features)
(30) Secrets, clues and cheats	When the player is given a hint that they believe will help them to win
(31) Win accentuation	The extent/duration to which the game emphasises a win (e.g. noises, flashing lights)
(32) Familiarity (non-gambling)	The extent to which the gambling incorporates familiar non-gambling concepts (e.g. <i>The Simpsons</i>)
(33) Name of the game	The name of the gambling product that may suggest something about the game (e.g. reference to money on a slot machine name – Action Bank, Piggy Bank; reference to skill – Skillcash, Fruitskill)
(34) Win probability	The probability of winning on a gambling activity
(35) Responsible gambling features	The incorporation of responsible gambling features within game (e.g., voluntary spending limits; voluntary time limits; self-exclusion features)
(36) Multi-staking	The opportunity to choose stake size as opposed to a fixed stake
(37) Jackpot size	The largest amount of money that a player can possibly win per game.
(38) Sophisticated gaming software	The use of sophisticated software to produce high quality technological games

Internet only structural characteristics

(39) Embedding	A practice that involves the hidden embedding of certain words on an Internet gambling site's web page through the use of meta-tags. A meta-tag is a command hidden in the web page to help search engines categorise sites.
(40) Circle jerks	An unscrupulous tactic used by gambling sites to stop people leaving an internet gambling website through the use of constant 'pop-ups'
(41) Online customer tracking	The practice of online gambling companies tracking the player's online gambling behaviour
(42) Live remote wagering	A derivative of land-based casino gambling that allows a person to place a bet remotely on a live game or event
(43) Multi-lingual sites	Gambling websites that are available in multiple languages for players
(44) Increased realism features	The use of features that increase the realism of the offline situation online (e.g. gambling via webcams, player and dealer avatars, sound effects (clapping, shuffling cards, coins clanging etc), chatting facility).
(45) Remote non face-to-face medium	The privacy provided by the internet can lead to feelings such as disinhibition, immersion, anonymity, and escapism

Situational characteristics

(46) Availability	Availability refers to how available the gambling activity is (e.g. the Internet is now widely available to most people).
(47) Number of venues	The number of venues evidently refers to the number of places in which individuals can gamble within a specific location or area.
(48) Accessibility	Accessibility refers to how easy it is to access and participate in gambling activity. Access to the Internet is now commonplace and can be done easily from the home and or workplace.
(49) Affordability	Affordability refers to how affordable Internet gambling is. Internet access is now becoming cheaper and cheaper to use online services with most paying monthly rental fee rather than paying by the minute which was commonplace a decade ago.
(50) Location	Location refers to where the gambling activity takes place. Internet gambling can take place from a variety of locations including the home, workplace, Internet café, library, GP surgery, school, University, or hospital.
(51) Skill school	Skill schools refer to professional advice offered on how to play a particular game (e.g., poker). This can occur offline, for example, on a practice table in a casino, or online on an Internet gambling website. Players can learn how to play the game and can receive advice and tips on winning.
(52) Sense of security -	Features that allow the player to trust and feel comfortable with the environment

environment	
(53) Advertising	Advertising refers to a variety of methods that are used to attract new customers to gambling activities.
(54) Social facilitation	The characteristic of social facilitation refers to the presence or absence of other people when gambling. Some players may gamble in isolation (i.e. alone), other people may gamble with friends. Socially facilitated interactions can refer to events where people attach meaning to a situation, interpret what others are meaning, and respond accordingly.
(55) Money access	Access to money refers to how easy it is for a player to access their money to gamble with. ATMs are now often located on the casino floor for easy access to money.
(56) Smoking access	Smoking access refers to whether a person is able to smoke while gambling
(57) Physical comfort	Physical comfort refers to how physically comfortable and relaxed a person is when gambling.
(58) Alcohol access	Availability of alcohol refers to how easy it is to have access to alcohol while gambling. Gambling while intoxicated may increase expenditure. Alcohol reduces inhibition and may lead to more intensive and riskier gambling (Baron & Dickerson, 1999).
(59) Trustmarks	How much trust a player places in the game operator /brand /website.
(60) Celebrity endorsement	Games may have backing and support from celebrities.
(61) Use of lighting	Bright lights and colour effects can induce gambling.
(62) Membership requirements	Membership requirement's refers to whether the gambling operator requires membership before gambling can take place.
(63) Sexual stimulation	Use of provocative images, language or suggestion
(64) Background music	The characteristic background music refers to music that is used in the gambling environment (offline or online) but is not part of the game.

Appendix 3: List of open codes (higher level categories and lower level codes)

- Advertising
 - Advertising may not have that much of an impact
 - Advertising should be banned
 - Dangers of gambling should be advertised
 - Encouragement to gamble
 - Ok to advertise gambling
 - Too much advertising

- Circumstances of gambling
 - Gamble whenever has money
 - Gambling alone
 - Gambling as often as possible
 - Gambling during work
 - Occasional gambling
 - Opportunity gambling
 - Time of day gambling

- Experience of gambling
 - Behaviours
 - Changes in own gambling behaviour
 - Chasing
 - Developing a problem
 - Gambling frequently
 - Only telling of wins
 - Differences in gambling compared to the past
 - Emotions
 - Adrenaline buzz
 - Emotions up and down
 - Feeling guilty
 - Lose track of time
 - Negative emotions and feelings
 - Positive emotions and feelings
 - The activity
 - Getting sponsorship
 - Losing
 - Trying to beat the machine
 - Winning

- Exploitation
 - Underage gambling
 - Wouldn't want children to gamble

- Features of the activity
 - Aesthetics can attract
 - Event frequency
 - Near win

- Future gambling
 - Continue to gamble in the future
 - Might gamble in the future
 - Might try online gambling

- Unlikely to gamble in the future
- Wouldn't play on the internet
- Gambling and society
 - Impact of smoking ban
 - Tighter regulations needed
- Gambling sessions
 - Cash games vs tournaments
 - Ending gambling session
 - Gambling activity
 - Activities wouldn't gamble on
 - Gamble on anything
 - Gambling on easier activities
 - Trying other gambling activities
 - Gambling strategies
 - Betting based on name or number
 - Bluffing
 - Calculating the odds of winning
 - Cheating
 - Distracting other players
 - Improving in the game
 - Keeping a record of gambling
 - Knowledge of the game
 - Learn from mistakes
 - Learning about gambling
 - Learning about other players
 - Watching people's reactions
 - Looking at form
 - Multiple gambling
 - Targeting weaker players
 - Using same numbers on lottery
 - Waiting for inside knowledge
 - Length of session varies
 - Money spent on gambling
- Internet gambling
 - Anonymous
 - Benefits of internet gambling
 - Choosing a website
 - Communicating online
 - Convenient
 - Different activities popular online
 - Electronic money can encourage people to spend more
 - Electronic money loses its value
 - Gender swapping online
 - Increase in internet gambling
 - Internet appeals to more people
 - Internet is too accessible
 - Negative opinion on internet gambling
 - Internet gambling more addictive
 - Perception of safety of internet
 - Internet gambling is safe

- Some websites more trustworthy than others
 - Uncertainty about safety of the internet
 - Playing demo games online
 - Methods for gambling sensibly
 - Controlled gambling
 - Stick to a limit
 - Negative consequences
 - Addiction
 - Coping with addiction
 - Denial or running away
 - Things could be worse
 - Gambling and other addictive behaviours
 - Who gets addicted
 - Criminal offences
 - Debt
 - Gambling affecting work
 - Gambling doesn't affect work
 - Gambling becomes focus of life
 - Getting money to gamble with
 - Lost touch with reality
 - Never satisfied
 - Gambling ruined their life
 - Health problems
 - Lack of control
 - Not liking self
 - Refused credit
 - Opinions on gambling
 - Addictive
 - Some activities more addictive than others
 - Defining gambling
 - Different levels of gambling
 - Fixed or corrupt gambling
 - Gambling is not good
 - Gambling is ok for most people
 - Most people lose
 - Opinions on gamblers and who gambles
 - Age differences
 - Paying for entertainment
 - Too much opportunity to gamble
 - Waste of money and time
 - Perception of skill
 - Some games involve more skill than others
 - Winning is down to skill
 - Reasons for gambling
 - Boredom
 - Competition
 - Enjoyable
 - Escape
 - Excitement
 - Felt accepted

- Fill a void
- Get out of a hole
- Influenced by others
- Jackpot size is an incentive
- Social
- Special events
- Stimulation
- Want to make money

- Reasons for gambling on the internet
 - Accessibility
 - Anonymity
 - Availability
 - Better price online
 - Can bet in play
 - Can gamble alone
 - Convenience
 - Greater variety of games online
 - Multiple games
 - No distractions online
 - Using the internet to practice
 - Websites with free bets

- Reasons for not gambling
 - Boring
 - Can't afford to gamble
 - Financially stable
 - Gambling doesn't appeal
 - Lack of knowledge on gambling
 - Little or no exposure to gambling as a child
 - Not enjoyable
 - Not interested
 - Rather spend money on other things
 - Too sensible to gamble
 - Wouldn't want to lose money

- Reasons for not using the internet to gamble
 - Better at the event
 - Doesn't seem as real
 - Internet is too quick
 - Internet is very antisocial
 - Lack of understanding
 - Might spend more online
 - No access to internet at home
 - Prefer to be outdoors
 - Too addictive
 - Waste of money
 - Wouldn't trust the websites

- Relationships
 - Criticised for gambling
 - Easier to talk in GA than with family
 - Family or friends don't gamble or rarely
 - Family or friends gamble
 - Hiding or lying to others

- Others not understanding
- Others with gambling problem
- Relationship problems
- Support
 - Lack of social support
- Social gambling
 - Developing friendships
 - Gambling with friends or family
- Starting gambling
 - Big win when first start gambling
 - Curious about gambling
 - Exposure to gambling
 - First experience
 - Introduced to gambling by family or friends
 - More enjoyable when he first started gambling
 - Parent gambled
 - Parents didn't gamble
- Trying to quit
 - Admit to addiction
 - Barriers to quitting
 - More help for problem gamblers is needed
 - Negative outcome
 - Positive outcome
 - Seeking professional help
 - Strategies to quit

Appendix 4: Online survey



Online gambling behaviour survey

Thank you very much for agreeing to complete this questionnaire on internet gambling behaviour. Your responses will be tremendously helpful in supporting research into gambling. The aim of the study is to explore people's online gambling behaviour and attitudes and opinions on gambling.

The questionnaire which follows is made up of multiple choice questions, and will take no longer than 10 minutes of your time. All responses given are anonymous and disguised so that your data can not be linked back to you personally. If you have any questions, comments or requests for further information, do not hesitate to contact me. If you wish to post the survey back please send it to the address at the end of the survey.

Thank you in advance.

Abby McCormack and Professor Mark Griffiths

By continuing with this survey you are consenting to participate in the study

PART 1

1. What is your gender? Male Female

2. What is your age? _____

3. What is your ethnic group?

White

British Irish Other

Mixed

White & black Caribbean White & black African White & Asian
Other _____

Asian or Asian British

Indian Pakistani Bangladeshi Other _____

Black or Black British

Caribbean African Other _____

Chinese

Other ethnic background

Prefer not to say

4. What is your primary country of residence?

UK USA Australia Canada Other _____

5. What is your marital status?

Single Married/living as couple Separated/divorced Widowed

6. What is your employment status?

Work full time Work part time Unemployed Retired
Student
Not working due to sickness Looking after home Doing volunteer work

7. What is your highest level of education?

Left school at 16 years Left school at 18 years Undergraduate degree
Postgraduate degree Doctoral degree

PART 2

8. How many years have you been gambling for (online or offline)?

Less than 1 year 1 yr- 1yr364 days 2 yr-4yr 364days 5 yr-8yr364 days
9+years

9. How many years have you been gambling on the internet for?

Less than 1 year 1 yr- 1yr364 days 2 yr-4yr 364days 5+ years

10. How often do you engage in the following types of gambling on the internet for money?

	Never	Less than once a month	1-4 times a month	Most days
Poker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roulette	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blackjack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horse race betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dog race betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sports betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spread betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Betting exchanges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bingo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fruit machines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Football pools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lottery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instant win games, e.g scratchcards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. What is your primary type of online gambling activity? _____

12. Do you also gamble offline (i.e., casino, betting shop, amusement arcade, race track)?

Yes No

13. If yes, do you gamble offline...

More frequently than gambling on the internet?
Less frequently than gambling on the internet?
About the same as gambling on the internet?

14. How often do you engage in the following types of gambling offline (i.e., casino, betting shop, amusement arcade, race track) for money?

	Never	Less than once a month	1-4 times a month	Most days
Poker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roulette	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blackjack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horse race betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dog race betting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- | | | | | |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Sports betting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Bingo | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fruit machines | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Football pools | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Lottery | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Scratchcards | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Betting privately with friends | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other..... | | | | |

15. What is your primary type of offline gambling? _____

PART 3

16. How old were you the first time you gambled on the internet for money?

- | | |
|----------------|--------------------------|
| Under 18 years | <input type="checkbox"/> |
| 18 – 24 years | <input type="checkbox"/> |
| 25-44 years | <input type="checkbox"/> |
| 45-54 years | <input type="checkbox"/> |
| 55-64 years | <input type="checkbox"/> |
| 65+ years | <input type="checkbox"/> |

17. Why do you use the internet to gamble? (You may tick more than one box)

- | | |
|---|--------------------------------|
| For convenience | <input type="checkbox"/> |
| For anonymity/privacy | <input type="checkbox"/> |
| The 24-hour availability | <input type="checkbox"/> |
| Easy accessibility | <input type="checkbox"/> |
| For comfort/don't have to leave the house | <input type="checkbox"/> |
| Offline venues are too far away | <input type="checkbox"/> |
| I do not like the atmosphere in land-based venues | <input type="checkbox"/> |
| I like the high speed of game play | <input type="checkbox"/> |
| I can play at my own pace | <input type="checkbox"/> |
| Better value online | <input type="checkbox"/> |
| It is safer than going to an offline venue | <input type="checkbox"/> |
| Influenced by gambling advertisements | <input type="checkbox"/> |
| I can bet 'in play' | <input type="checkbox"/> |
| The greater variety of games online | <input type="checkbox"/> |
| The greater flexibility in stake size | <input type="checkbox"/> |
| I spend less money online | <input type="checkbox"/> |
| Because I can play multiple games | <input type="checkbox"/> |
| Because I can practice for free | <input type="checkbox"/> |
| Because of the bonus offers / free bets | <input type="checkbox"/> |
| To win money | <input type="checkbox"/> |
| Out of boredom | <input type="checkbox"/> |
| Because it is enjoyable | <input type="checkbox"/> |
| Because of the person-to-person competition | <input type="checkbox"/> |
| It allows feelings of escapism | <input type="checkbox"/> |
| I am influenced by others | <input type="checkbox"/> |
| For the stimulation | <input type="checkbox"/> |
| For the challenge | <input type="checkbox"/> |
| Other reasons (please state) | <input type="checkbox"/> _____ |

18. What would you say is your primary reason for gambling online? _____

19. What do you feel (if any) when gambling on the internet? (You may tick more than one box)

- | | |
|-------------------------------|--------------------------|
| Euphoria (a 'buzz' or 'high') | <input type="checkbox"/> |
|-------------------------------|--------------------------|

- Relaxation
 - Excitement
 - Anger
 - Escapism
 - Lonely
 - Frustrated
 - Irritable
 - Ashamed / embarrassed
 - Empty
 - Guilty
 - Happy
 - Other (please state) _____
-

PART 4

20. What do you view as being the major drawbacks of gambling on the internet? (You may tick more than one box)

- There are no drawbacks
- Need a credit card
- Worried about fraud
- Don't trust the websites
- The bets might be rigged (little chance of winning)
- Don't want to give out personal information
- Can't see your opponent
- Lack of atmosphere
- Doesn't seem as real as gambling offline
- Have to wait a long time to collect winnings
- Easier to hide gambling problem
- Other (please state) _____

21. Where do you usually participate in internet gambling?

- Home Work Place of education Friend's house Other _____

22. What time of day do you typically gamble on the internet?

- Weekday morning Weekday afternoon Weekday evening Weekend morning
 Weekend afternoon Weekend evening Anytime I feel like it

23. When you gamble on the internet for money who do you usually play with? (You may tick more than one box)

- Alone
- Friends
- Parents
- Other relatives
- Work colleagues
- Others (please state) _____

24. On average, how long do you gamble for each time you gamble on the internet?

- Less than 10 mins 11-30 mins 31 mins-59mins 1hr-1hr59 2hrs-3hr59
 4+hours

25. What brings your gambling session to an end? (You may tick more than one box)

- Had enough / bored
- Tired
- Run out of money
- Lost too much
- Won a lot

- Reaching a target
- Frustration
- Something else to do
- Other (please state)

PART 5

26. Do you play multiple games online (i.e., more than one poker game, or several activities at the same time)?

- Always Very often Sometimes Rarely
 Never

27. Do you ever play the practice games on the internet (i.e., gamble without real money)?

- Always Very often Sometimes Rarely
 Never

28. Do you use the autoplay features when gambling online?

(The autoplay feature is where the game is automatically played on behalf of the player)

- Always Very often Sometimes Rarely
 Never

29. Overall, in the last 7 days, did you win or lose money?

- Lost Go to question 29 (a)
 Won Go to question 29 (b)
 Broke even
 Haven't gambled in the last 7 days

29 (a) What is the total amount lost in the last 7 days? _____

29 (b) What is the total amount won in the last 7 days? _____

30. Do you communicate on the internet with other players when gambling?

- Always Very often Sometimes Rarely
 Never

31. What facilities do you use to communicate on the internet with other players while gambling?

- I have never communicated online Chat box Emails
 Forums Other (please state) _____

32. Have you made friends through gambling on the internet?

- Yes No

PART 6

33. Have you ever swapped gender on gambling websites? (i.e., pretended to be the opposite sex?)

- Yes No

If yes, why? _____

34. Have you ever changed your age on gambling websites?

- Yes No

If yes, why? _____

35. Which factors are your reasons for choosing a gambling website? (You may tick more than one box)

- Some of my friends use it
- Brand name (i.e. trustworthy/secure site)
- Free offers/bonuses
- Celebrity endorsements
- Advertisements
- Recommendations from other players
- Ease of use
- Graphics
- Variety of games to play
- Other (please state) _____

36. How did you come across your first internet gambling website?

- I clicked on a 'pop-up' message while I was on an internet site unrelated to gambling
- While I was surfing on the internet I decided to search for a gambling site
- A friend recommended it
- Online advertisement
- Offline advertisement
- Promotion (e.g., free gambling CD)
- Other (please state) _____

PART 7

The following statements are about your attitudes and opinions towards features of online gambling. Some of these you might agree with and others you might not. There are no right or wrong answers.

37. I would prefer to gamble on websites that have information about responsible gambling

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

38. I would prefer to gamble on websites that regularly tell me how much I have lost

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

39. I would prefer to gamble on websites that regularly tell me how long I have been playing

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

40. I am attracted by the graphics on gambling websites

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

41. I am attracted by the sound effects on gambling websites

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

42. Internet gambling is safe

- Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

43. Some gambling websites are more trustworthy than others

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

44. I prefer gambling activities that are quick (i.e., where I can gamble and get the result straight away)

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

45. I prefer online games that are easy to learn

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

46. I prefer online games with large jackpots

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

PART 8

47. I like to gamble against other people online

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

48. I prefer online games with some element of skill

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

49. If I nearly win in an online game, then I am more likely to play again

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

50. It is easy for children to gamble on the internet

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

51. Internet gambling is more addictive than offline gambling

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

52. Gambling advertisements do not influence my gambling behaviour

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

53. The potential dangers of gambling should be advertised

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

54. I tend to spend more gambling using virtual money (online) than gambling using real money (offline).

Strongly agree Agree Neither agree nor disagree Disagree
Strongly disagree

PART 9

NOTE: In the following questions **gambling** refers to betting money on activities (e.g., lottery, cards, sports wagers, bingo, slot machines, casino-type games, sporting events, games of skill, etc.) with a chance of winning money. This can include gambling on the Internet.

During the past 12 months:

54. How often have you bet more than you could really afford?

Never
Sometimes
Most of the time
Almost always

55. How often have you needed to gamble with larger amounts of money to get the same feeling of excitement?

Never
Sometimes
Most of the time
Almost always

56. How often have you gone back another day to try to win back the money you lost?

Never
Sometimes
Most of the time
Almost always

57. How often have you borrowed money or sold anything to get money to gamble with?

Never
Sometimes
Most of the time
Almost always

58. How often have you felt that you might have a problem with gambling?

Never
Sometimes
Most of the time
Almost always

59. How often have people criticised your betting or told you that you had a gambling problem regardless of whether or not you thought it was true?

Never
Sometimes
Most of the time
Almost always

60. How often have you felt guilty about the way you gamble, or what happens when you gamble?

Never
Sometimes
Most of the time
Almost always

61. How often has your gambling caused you any health problems, including stress or anxiety?

- Never
- Sometimes
- Most of the time
- Almost always

62. How often has your gambling caused any financial problems for you or your household?

- Never
- Sometimes
- Most of the time
- Almost always

PART 10

63. Do you smoke cigarettes?

- Never Occasionally Frequently Daily

64. Smoking bans in offline gambling venues have caused me to:

- Gamble more often on the internet Gamble less often on the internet
Have had no impact Not applicable

65. How often do you drink alcohol?

- Never Occasionally Frequently Daily

66. Do you drink alcohol while gambling on the internet?

- Always Very often Sometimes Rarely
Never

67. Do you know anyone who has or has had a problem with gambling? (You may tick more than one box)

- I don't know anyone
- Friends
- Partner
- Parents
- Other relatives
- My child/children
- Work colleagues
- Other _____

68. If you feel you have a problem with gambling, have you ever sought help for your gambling problem? (You may tick more than one box)

- Have not spoken to anyone
- Family or friend
- GP/nurse
- Social worker
- Probation officer
- Faith or religious leader
- GamCare
- Gamblers Anonymous
- Residential treatment
- Online help service
- Another addiction service
- Credit/debt advisor
- Employer
- Someone else

69. Do you have any long-standing illness, disability or infirmity? By long standing we mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time?

Yes Go to 69.b

No Go to Q70

IF YES:

69b. Do any of these long-standing illnesses, disabilities or infirmities limit your activities in any way?

Yes No

70. Do you ever gamble on a mobile phone?

Always

Very often

Sometimes

Rarely

Never

71. Do you ever gamble on interactive TV?

Always

Very often

Sometimes

Rarely

Never

Thank you for taking the time to fill this out. Your participation is greatly appreciated!

Address:

Abby McCormack

Nottingham Trent University,

Burton Street,

Nottingham,

NG1 4BU,

Email: abby.mccormack@ntu.ac.uk

Or mark.griffiths@ntu.ac.uk

Appendix 5: List of internet gambling websites where the survey was posted

1. A World of Poker (www.aworldofpoker.com)
2. All Gambling Forum (<http://forum.all-gambling.org>)
3. Arnold Synder's Blackjack Forum Online (www.blackjackforumonline.com)
4. Bang The Book (www.bangthebook.com)
5. Beat The Casino (www.beatthecasino.com)
6. Best Casino Page (www.bestcasinopage.com/talkback.html)
7. Best of the Bets (www.bestofthebets.co.uk)
8. Bettors Chat (www.bettorschat.com)
9. Bingo Hotspot (www.bingohotspot.com)
10. Bingo Life (www.bingolife.com)
11. Casino Bonus and No Deposit Casino Forum (www.noluckneeded.com)
12. Casino Bonus Forums (www.casinobonusforum.org)
13. Casino Games (www.gamesandcasino.com)
14. Casino Meister (www.casinomeister.com)
15. Full Tilt Poker Room (www.fulltiltpoker.com)
16. Gambling Chit Chat (www.gamblingchitchat.com)
17. KLS Betting (www.klsbetting.com)
18. Lay the Odds (www.laytheodds.com)
19. Online Casino (www.gamblingplanet.org)
20. Online Casinos (www.onlinecasinoreviewer.com)
21. Online Gambling Alliance South Africa (www.ogasa.co.za)
22. Online Poker Forum and Casino Community – WassOnline (www.wasonline.com/poker-forum)
23. PeepsPlace (www.peepsplace.com)
24. Playing Bingo (<http://playingbingo.co.uk>)
25. Puntermate – Betting Forum (www.puntermate.net)
26. Slots jam (www.slotsjam.com)
27. Sports Betting Forums (www.therxforum.com)
28. talkSport (www.talksport.net)
29. The Bingo Forum (www.thebingoforum.co.uk)
30. The Hodgepodge Online Gambling Forum (www.hpgambling.com/forum)
31. Two Plus Two Poker Forum (<http://forumserver.twoplustwo.com>)
32. Ultimate Capper Sports Gambling Forum (www.ultimatecapper.com/forum)