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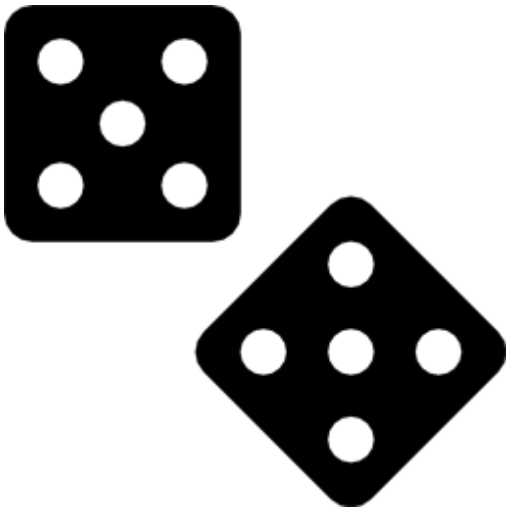
Gambling behaviour in England and Scotland

Findings from the Health Survey for England 2012 and Scottish Health Survey 2012



Authors: Heather Wardle, Carla Seabury, Hashim Ahmed, Colin Payne, Christos Byron, Joan Corbett, Rosie Sutton
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NatCen Social Research
35 Northampton Square
London EC1V 0AX
T 020 7250 1866
www.natcen.ac.uk

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Executive summary

Aims and objectives

- This report provides information about gambling behaviour in England and Scotland using data combined from the Health Survey for England (HSE) 2012 and the Scottish Health Survey (SHeS) 2012.

- The main aims and objectives of this report were to:
    - provide in-depth analysis of gambling and problem gambling levels and;
    - examine the associations with problem and at-risk gambling.

Participation in gambling

- 65% of English and Scottish adults (16+) had gambled in the past year, with men (68%) being more likely than women (62%) to do so.

- Past year gambling participation varied by age with participation rates being highest among the middling age groups and lowest among the very young or very old. This pattern was the same for men and women.

- Rates of past year gambling are heavily influenced by the popularity of the National Lottery. To examine participation rates in other forms of gambling activity, estimates were produced excluding those who only bought tickets for the National Lottery Draw. Overall, 43% of English and Scottish adults had gambled on other activities in the past year.

- When National Lottery only gamblers are excluded, gambling participation was highest among younger adults.

- Among both men and women the most popular forms of gambling were: purchase of tickets for the National lottery (men 56%, women 49%); purchase of scratchcards (19% and 20% respectively), participation in other lotteries (14% for both men and women) and betting on horse racing (12% and 8% respectively).

- Men tended to be more likely than women to take part in most activities and to have a larger gambling activity repertoire than women. The exceptions to this are bingo, with men being less likely to participate than women (3% and 7% respectively); and scratchcards and other lotteries, with men and women being equally likely to participate.

Gambling, health and lifestyle

- Past year gambling prevalence was associated with a range of health and lifestyle factors. Prevalence was highest among those who smoke cigarettes, who consume alcohol and those with elevated Body Mass Index (BMI) levels, showing an association

with other health and lifestyle risk factors. However, past year gambling prevalence was also higher among those with better rates of mental wellbeing and mental health and among those with better self-reported health.

Types of gamblers

- Latent Class Analysis revealed seven types of male and female gamblers. Groups ranged from non-gamblers to National Lottery Draw only gamblers to multiple interest gamblers (i.e., those who took part in the most gambling activities in the past year).

- Among women, multiple interest gamblers (who took part in four or more gambling activities) were more likely to be younger, to consume greater amounts of alcohol, to have high blood pressure and have a BMI of 30 or more (indicating obesity). They were less likely to be in full-time education.

- Among men, multiple interest gamblers (who took part in at least six activities or more) were also more likely to be younger and to consume greater amounts of alcohol. They were more likely to be Catholics (than have no religion affiliation) and among those who had the highest levels of gambling engagement (i.e., took part in more than 11 gambling activities) they were more likely to have a General Health Questionnaire-12 score indicating probable psychological ill-health. They were less likely to be separated, divorced or retired.

At-risk gambling

- At-risk gambling was measured using the Problem Gambling Severity Index (PGSI). This identifies people who have experienced some difficulty with their gambling behaviour but who are not classified as problem gamblers. Two groups are identified: gamblers at 'low risk' of harm (a PGSI score of 1-2) and gamblers at 'moderate risk' of harm (a PGSI score of 3-7).

- Overall, 3.2% of adults were low risk gamblers (a PGSI score of 1-2) and a further 1.0% were moderate risk gamblers (a PGSI score of 3-7), meaning that overall 4.2% of adults had a PGSI score which categorised them as 'at-risk' gamblers.

- Rates of low risk and moderate risk gambling were higher among men than women and were higher among younger age groups.

- Factors associated with at-risk gambling were age (with younger people being more likely to be at-risk gamblers), religion (with Catholics being more likely to be at-risk gamblers and Muslims being less likely, compared with those with no religious affiliation), cigarette smoking and increased levels of alcohol consumption.

Problem gambling

- Problem gambling is gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits.

- Estimates of problem and at-risk gambling are provided according to two different measurement instruments, the Diagnostic and Statistic Manual of Mental Disorders IV (DSM-IV) and the PGSI.

- According to the DSM-IV, problem gambling prevalence among adults living in private households in England and Scotland was 0.5%. Men were more likely than women to be classified as a problem gambler according to the DSM-IV (0.8% and 0.1% respectively).

- According to the PGSI, problem gambling prevalence among adults in England and Scotland was 0.4%, with men again being more likely than women to be classified as a problem gambler (0.7% and 0.1% respectively).

- It is also possible to produce a problem gambling estimate based on whether participants were categorised as problem gamblers according to **either** the DSM-IV or the PGSI. According to either the DSM-IV or the PGSI, problem gambling prevalence among adults in England and Scotland was 0.6%, with men again being more likely than women to be classified as a problem gambler (1.0% and 0.2% respectively).

- Factors associated with problem gambling were being male, being from Black/Black British, Asian/Asian British or other non-White backgrounds, having low mental wellbeing and having ever had high blood pressure.

- Those from Black/Black British backgrounds emerged as a key group at risk of the experience of gambling-related harm.

Comparisons with the British Gambling Prevalence Survey series

- Comparisons of the combined HSE/SHeS data with the British Gambling Prevalence Survey (BGPS) estimates should be made with caution. While the methods and questions used in each survey were the same, the survey vehicle was not. It is widely acknowledged that different survey vehicles can generate different estimates using the same measures because they can appeal to different types of people, with varying patterns of behaviour.

- Overall, the rates of past year gambling reported in the combined health survey series are typically lower than those reported in the BGPS series. Results from this present health surveys report showed that 65% of adults had gambled in the past year,

whereas estimates from the BPGS series ranged from 72% in 1999, to 68% in 2007 to 73% in 2010.

- According to the combined health survey data, the problem gambling rate as measured by the DSM-IV was 0.5%. This was similar to problem gambling rates observed in the BGPS series which for England and Scotland were 0.6% in both 2007 and 1999 and 0.9% in 2010. The differences between survey years were not significant.

- Problem gambling rates according to the PGSI were also similar between the surveys, being 0.4% for the combined health survey and 0.6% in BGPS 2007, and 0.7% in BGPS 2010.

- Rates of problem gambling according to either the DSM-IV or PGSI did vary by survey year. Estimates were highest in 2010 (1.2%) and were lower in both the BGPS 2007 (0.8%) and the combined health survey data (0.6%).

- Overall, problem gambling rates in Britain appear to be relatively stable, though we caution readers against viewing the combined health survey results as a continuation of the BGPS time series. This is because of the change of survey vehicle which could affect our ability to make direct comparisons

1 Introduction

1.1 Background and aims

The overall aim of this study is to provide up to date information on participation in gambling, particularly problem gambling, in England and Scotland. Until 2010, gambling behaviour was monitored through the British Gambling Prevalence Survey (BGPS), with studies conducted in 1999, 2007 and 2010. In 2010 the decision was taken to include questions about gambling participation and the experience of gambling problems in various national health surveys instead of commissioning a fourth BGPS study.

The benefit of this approach was that these national health surveys had a methodology that was very similar to the BGPS and targeted the same population group (i.e., adults living in private households). Questions were secured in the Health Survey for England (HSE) 2012 and the Scottish Health Survey (SHeS) 2012. Unfortunately, it was not possible to secure gambling questions in the equivalent Welsh Health Survey (due to constraints of questionnaire space). The Gambling Commission, having ensured that gambling behaviour was monitored in England and Scotland respectively, required that the results of these two studies be combined so that gambling behaviour across both jurisdictions could be understood. The main aims and objectives of this project were to:

- provide in-depth analysis of gambling and problem gambling levels and;
- examine the associations with problem and at-risk gambling.

This report is the outcome of this process. It combines data collected from both the HSE 2012 and SHeS 2012 to fully explore patterns of gambling participation, and problem and at-risk gambling among adults aged 16 and over living in England and Scotland.

The last decade has seen many changes in the British gambling landscape. The most notable of these include the growth in the availability of remote gambling (particularly via the internet), the introduction of (the then-called) 'fixed odds betting terminals' into most bookmakers, an increase in the prominence of poker (both online and offline) and the introduction of online betting exchanges.

Traditionally, gambling in Great Britain was commonly available in a variety of environments including those dedicated primarily to gambling, for example, betting shops, casinos, bingo halls, amusement arcades. With changes like the introduction of the National Lottery Draw, gambling activity is also now present in environments where it is just one of many activities that can be done; for example, buying lottery tickets or scratchcards in supermarkets, post offices, petrol stations and so on.

Most types of gambling can now be engaged in remotely via the internet, interactive

television, and/or through internet-enabled mobile phones. The range of activities that can be played online vary from playing roulette or slot machines at an online casino, to buying lottery tickets using a mobile phone, or betting on a horse race via interactive television. In short, gambling is a more widely available product now than it was ten or 20 years previously.

On 18 October 2004, a Gambling Bill was introduced into the British Parliament which came into force as The Gambling Act (the Act) on 1 September 2007. The Act replaced the Gaming Board for Great Britain with the Gambling Commission, which regulates the gambling industry on behalf of the Department for Culture, Media and Sport (DCMS). The Gambling Commission's primary objectives in regulating gambling activities are:

- to keep crime out of gambling;
- to ensure that gambling is conducted fairly and openly; and
- to protect children and other vulnerable people.

The Act also significantly updated gambling laws, including the introduction of a new structure of protections for children and vulnerable adults, as well as bringing the growing internet gambling sector within British regulation for the first time. There has, therefore, been a substantial change in the regulation of gambling in Great Britain since 2007. Since the introduction of the Act further changes have been announced. For example, in May 2013 the Gambling (Licensing & Advertising) Bill was introduced into Parliament. Subject to parliamentary approval, the Bill will require operators that transact with or advertise to British consumers to obtain an operating licence from the Gambling Commission.

With continuing changes in the way that gambling is advertised, marketed and regulated, it is important to continue to understand how many people gamble, on what products, and the types of peoples that engage. It is also vitally important to continue to monitor how many people experience harm from gambling. Gambling, like many other public health behaviours, is an activity that many people engage in without experiencing problems. However, some people experience difficulties with their gambling behaviour that can lead to a range of adverse consequences. It is therefore important to monitor how many people experience problems and to assess who is most likely to do so, in order to plan and implement effective gambling policy, interventions and regulation.

This report provides the most up to date information available about both gambling participation and problem gambling using data combined from the HSE and SHeS 2012 surveys. Results are representative of adults (aged 16 and over) living in private households in England and Scotland. What follows is an overview of each survey's study design, the process undertaken for combining data, caveats to be considered when reviewing the results and report conventions.

1.2 Overview of study design

This section gives a broad overview of the sample design and interviewing process for each study. More details are provided both in the appendix to this report and the full technical reports to both the HSE and SHeS.[1] An overview of the methods undertaken to combine the survey data is also provided.

1.2.1 Sample and response

Health Survey for England 2012

The HSE 2012 sample was designed to be representative of the population living in private households in England. It adopted a multi-stage stratified probability sampling design. The sampling frame was the small user Postcode Address File (PAF), that covers over 99% of households.

At the first stage a random sample of primary sampling units (PSUs) was selected based on postcode sectors. From within each PSU, a random sample of postal addresses was drawn. In total, 564 PSUs were selected with 16 addresses each, giving a total sample size of 9,024 addresses. In each selected household, all adults aged 16 and over were selected for interview (up to a maximum of ten individuals) and up to two children (aged 0-15).

In total, interviews were achieved with 8,291 adults and 2,043 children. Past year gambling participation data were obtained from 7,359 people. Problem gambling data were obtained from 6,791 adults. This means that 18% of adults who were eligible to complete the problem gambling screens did not do so. Data have been weighted to account for this non-response; see Appendix A for more details.

Response to the survey can be calculated in two ways: at a household level and at an individual level. Interviews were carried out at 64% of sampled eligible households (after removing vacant addresses and other ineligible addresses from the sample). Interviews were obtained with 85% of adults in 'co-operating' households (where at least one person was interviewed).

The assumption was made that households where the number of adults was not known contained, on average, the same number of adults as households where it was known. On this basis, the individual response rate, based on all eligible households, was estimated to be 56% among adults.

Scottish Health Survey 2012

The SHeS 2012 sample was drawn by the Scottish Government in conjunction with the samples for two of the other large population surveys they commission (the Scottish Household Survey and the Scottish Crime and Justice Survey).

An initial sample of 9,555 addresses was drawn from the PAF. These addresses were comprised of three sample types:

(a) 4,459 formed the main sample: as in the HSE, up to ten adults and two children were eligible to be interviewed per household.

(b) 4,140 addresses formed an additional child boost sample. Only households containing children aged under 16 were eligible to participate and up to two children per household could be interviewed.

(c) 956 addresses formed the Health Board boost sample where only adults were eligible to be interviewed.

Overall, in 2012 there were 4,815 interviews with adults and 1,787 interviews with children aged under 16. Past year gambling participation data were obtained from 4,393 adults aged 16 and over. Problem gambling data were obtained from 4,081 adults. This means that c.15% of adults who were eligible to complete the problem gambling screens did not do so. Data have been weighted to account for this non-response; see Appendix A for more details.

Interviews were carried out at 66% of sampled eligible households and were obtained with 90% of adults in 'co-operating' households. The individual response rate, based on all eligible households, was estimated to be 56% among adults.

1.2.2 Data collection

Data collection for both the HSE and SHeS followed the same procedures. Interviews were carried out using computer-assisted interviewing. At each household, the interviewer first completed a household questionnaire with the household reference person or their partner. The questionnaire obtained information about all members of the household. If there were one or two children aged under 16, they were automatically included in the sample for an interview. If there were three or more, two were selected at random.

An individual interview was then carried out with all selected adults and children, with height and weight measurements obtained towards the end of the interview. The questionnaire was interviewer-administered using a laptop, with the exception of one section that was self-completed by the respondent in a paper questionnaire; the paper self-completion included questions about gambling, anxiety, depression and self-harm, among others.

At the end of the interview, participants were asked for their agreement to the second stage of the survey; the biological module. For the HSE, this involved a follow up visit by a nurse. The nurse took measurements of the waist and hip as well as blood, urine and saliva samples from those eligible and willing. For the SHeS, there was no nurse visit; the

biological module was carried out by the interviewer and only with adult participants. The biological module on the SHeS did not include blood samples.

1.2.3 Combining HSE and SHeS data

The process of combining the HSE and SHeS involved looking at the individual datasets of both studies, identifying the common variables as well as the variables which were not identical but could, possibly, be combined with some modifying. These variables were then combined using PASW v18 (formerly SPSS).

While many variables were identical, there were a significant number with different names and, in some cases, different answer options. This was despite the question covering the same topic or issue. In this case, certain answer options needed to be combined so that the matching could take place. For example, in the case of ethnicity, some of the SHeS answer options had to be combined before they could be matched with the HSE.

The process undertaken to produce the combined dataset was as follows:

- review of the HSE and SHeS content to identify common variables;
- development of a common data dictionary *(as many of the variables in each survey were named differently)*;
- review, analysis and reconciliation of common variables to ensure that data were recorded in the same way *(i.e., ensure answer options were coded identically, that data were asked of the same population groups, that missing values were comparable, variable formats were consistent, data order the same, etc.)*;
- creating and merging new combined data.

Each of these stages were performed with contribution from at least two team members and independently checked for accuracy by a third.

1.2.4 Weighting combined data

Full details of the weighting strategies used for the HSE and SHeS individually can be found in their respective technical reports. However, in addition to producing a new combined dataset, a number of further weights needed to be produced to:

- scale the data so that it matched the population distribution of England and Scotland;
- weight the data for non-response to both the gambling participation questions and the problem gambling screens;
- in the case of the BGPS, reweight and scale the data to be reflective of the population of England and Scotland only (excluding Wales).

These are detailed below (further information is provided in Appendix A).

Combined Health Surveys data: gambling participation weights

The sub-sample of 11,774 HSE and SHeS respondents who answered at least one of the gambling participation questions was calibrated separately within the HSE and SHeS. This was done to ensure that the weighted distributions of age-by-gender and region (Strategic Heath Authority (SHA) for the HSE, Health Board for the SHeS) matched the ONS 2012 mid-year population estimates for England and Scotland respectively. This therefore adjusted for non-response to the gambling participation questions by these factors.

Combined Health Surveys data: problem gambling (DSM-IV and PGSI) weights

The sub-sample of HSE and SHeS respondents who completed the problem gambling screens (DSM-IV:10,872, PGSI: 10,857) was calibrated separately within the HSE and SHeS, so that the weighted distributions of age-by-gender and region (SHA for the HSE, Health Board for the SHeS) matched the ONS 2012 mid-year population estimates for England and Scotland respectively. This adjusted for a further level of non-response to the problem gambling screens.

British Gambling Prevalence Survey weights

For each of the BGPS 2010, 2007 and 1999 surveys, the sub-sample of respondents in England and Scotland (7,319 in 2010, 8,469 in 2007 and 7,176 in 1999) was calibrated so that the weighted distributions of age-by-gender (within England and Scotland) and Government Office Region (GOR) matched the ONS mid-year population estimates for each respective year.

1.3 Caveats

As with any survey, possible biases may be introduced into the data by the method of data collection chosen. The HSE and SHeS 2012 surveys are no exception to this. Sources of potential bias include non-response biases (introduced by varying participation rates among subsections of the population) and social desirability or acceptability biases in responses to certain questions. Furthermore, all interviews in the health surveys were studies of people living in private households. This, by definition, excludes a number of population groups, such as homeless people, those living in institutions (e.g., those in prison or student halls of residence) which should be borne in mind when interpreting survey results.

Potential biases were carefully considered at the outset of the survey, and the survey methodology used attempted to overcome these potential areas of bias in a number of ways. For example, given the perceived sensitive nature of problem gambling, these questions were administered using a confidential self-completion questionnaire to encourage honest reporting. Final data were weighted for non-response to account for differences in the sample profile compared to population estimates for Britain.

For most key characteristics, the surveys will be a close reflection of population estimates. However, it is possible that, as with the BGPS, some sections of the population such as those in poor health may be slightly over-represented. These differences should be kept in mind when interpreting survey results. Where appropriate, caveats of this nature have been highlighted within individual chapters throughout this report.

1.4 Report conventions

- Unless otherwise stated, the tables are based on the responding sample for each individual question (i.e., item non-response is excluded). Therefore bases may differ slightly between tables.

- The group to whom each table refers is shown in the top left hand corner of each table.

- The data used in this report have been weighted. The weighting strategy is described in Appendix A of this report. Both weighted and unweighted base sizes are shown at the foot of each table. The weighted numbers reflect the relative size of each group of the population, not the number of interviews achieved, which is shown by the unweighted base.

- The following conventions have been used in the tables:
    - \- No observations (zero values)
    - 0 Non-zero values of less than 0.5% and thus rounded to zero
    - [ ] An estimate presented in square brackets warns of small sample base sizes. If a group's unweighted base is less than 30, data for that group are not shown. If the unweighted base is between 30-49, the estimate is presented in square brackets.
    - * Estimates not shown because base sizes are less than 30.

- Because of rounding, row or column percentages may not exactly add to 100%.

- A percentage may be presented in the text for a single category that aggregates two or more percentages shown in the table. The percentage for that single category may, because of rounding, differ by one percentage point from the sum of the percentages in the table.

- Some questions were multi-coded (i.e. allowing the respondent to give more than one answer). The column percentages for these tables sum to more than 100%.

- The term 'significant' refers to statistical significance (at the 95% level) and is not intended to imply substantive importance.

- Only results that are significant at the 95% level are presented in the report commentary.

Notes and references

[1] For the technical reports of each health survey see: Craig, R., Mindell J., (eds) (2013) *Health Survey for England 2012: Methodology. Volume 2.* Leeds: Health and Social Care Information Centre; Rutherford, L., Hinchliffe, S., Sharpe, C. (eds) (2013) *Scottish Health Survey: Technical report. Volume 2*. Edinburgh: The Scottish Government.

2 Past year gambling participation

2.1 Introduction

This chapter looks at levels of participation in gambling, and whether this varies by a range of characteristics. For all gambling activities, participation was measured over the past year. Respondents were shown a list of gambling activities and were asked whether they had participated in each of the activities in the past 12 months. Participation was defined as having 'spent money' on the activity.

The activities included in the list were intended to cover all types of gambling available. However, to allow for the possibility that an activity was missed or that respondents may have misunderstood an activity description, an option was provided for respondents to mention another form of gambling.

This chapter covers participation in individual gambling activities as well as overall participation levels in gambling. Participation levels are compared by the age and sex of the respondent, their ethnic group, religious affiliation, highest educational qualification, marital status, economic activity, the National Statistician's Socio-Economic Classification (NS-SEC) of the household reference person, tenure, household composition and Government Office Region (GOR) .

2.2 Past year gambling participation by socio-demographic characteristics

2.2.1 Past year gambling prevalence, by age and sex

Overall prevalence by age and sex

Overall, 65% of adults had gambled in the past year. As Table 2.1 shows, gambling participation was higher among men (68%) than women (62%). The National Lottery Draw[1] was the most popular gambling activity for both men (56%) and women (49%). As participation in the National Lottery Draw was so much higher than other gambling activities, it is useful to look at prevalence rates without 'National Lottery only' play as this can highlight patterns in other forms of gambling participation.

Excluding those who only participated in the National Lottery Draw, 43% of adults had gambled on some other activity. Men remained significantly more likely than women to participate, with 46% of men and 40% of women taking part in other types of gambling activity. This pattern was true for nearly all individual gambling activities, with the exception of bingo where women had a

significantly higher participation rate than men (7% compared with 3%) and scratchcards and other lotteries where prevalence rates for both men and women were similar.

Table 2.1

Gambling participation by sex

All adults aged 16 and over *2012*

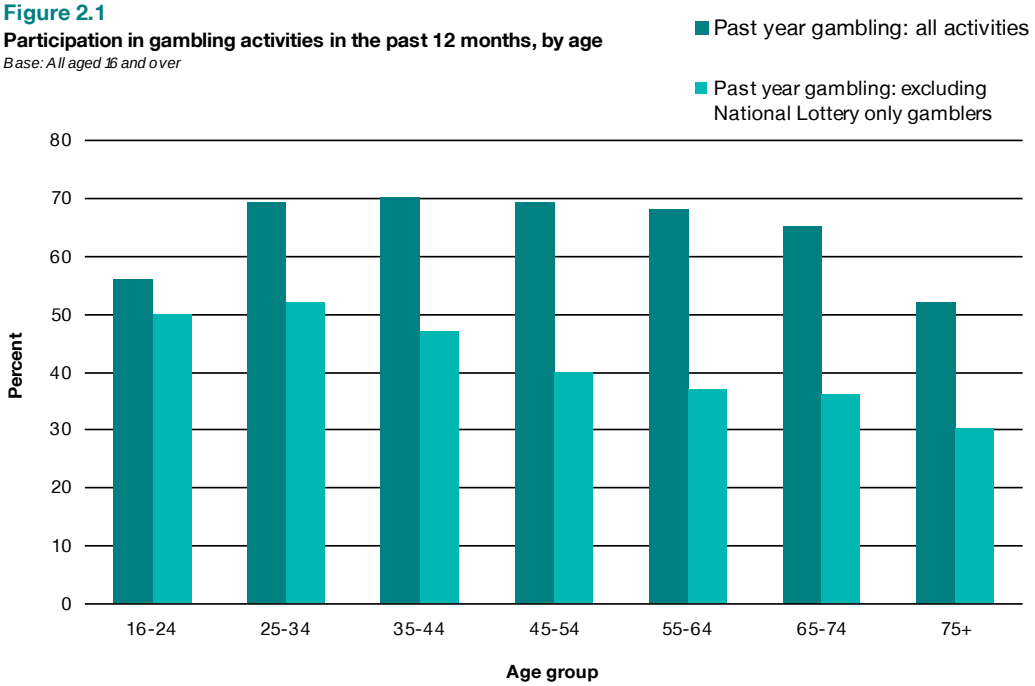
Gambling activity	Men %	Women %	Total %
Lotteries and related products			
National Lottery Draw	56	49	52
Scratchcards	19	20	19
Other lotteries	14	14	14
Machines/games			
Football pools	5	1	3
Bingo (not online)	3	7	5
Slot machines	10	4	7
Machines in a bookmakers	5	1	3
Casino table games (not online)	5	1	3
Poker played in pubs or clubs	2	0	1
Online gambling on slots, casino or bingo games	4	2	3
Betting activities			
Online betting with a bookmaker	8	2	5
Betting exchange	2	0	1
Horse races (not online)	12	8	10
Dog races (not online)	4	2	3
Sports events (not online)	8	1	5
Other events (not online)	2	0	1
Spread-betting	1	0	1
Private betting	8	2	5
Other gambling activity			
Any other gambling	3	1	2
Summary			
Any gambling activity	*68*	*62*	*65*
Any gambling (excluding National Lottery Draw)	*46*	*40*	*43*
Any online gambling (excluding National Lottery)	*11*	*4*	*7*
No gambling in past 12 months	*32*	*38*	*35*
Bases (unweighted) [a]	*5102*	*6434*	*11536*
Bases (weighted) [a]	*5668*	*5883*	*11551*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

Rates of past year participation in gambling varied by age (see Table 2.2). For both men and women, past year gambling was highest among the middle age groups and lowest among the very young and very old. Rates of gambling among adults aged 25-54 ranged between 69% and 70% while those under 25 had rates of 56%. Older adults (aged 75+) had the lowest gambling rates of all, with only 52% having participated in gambling in the past year. This pattern was similar for both men and women.

However, when those who only spent money on the National Lottery Draw were excluded from the analysis, the pattern of participation by age changed. Participation in other forms of gambling was highest among the younger age groups and declined with age (see Figure 2.1). Half (50%) of 16-24 year olds and 54% of 25-34 year olds had participated in a form of gambling other than the National Lottery Draw. This fell to 30% for those aged 75 and over. This pattern was the same for both men and women.

Figure 2.1
Participation in gambling activities in the past 12 months, by age
Base: All aged 16 and over



Participation in individual activities by age and sex

After the National Lottery Draw (52%), scratchcards were the next most popular form of gambling with 19% of adults having bought a scratchcard in the past year. This was followed by buying tickets for other lotteries (14%) and betting on horse races with a bookmaker (10%). This pattern was the same for both men and women. After these activities, playing slot machines was the next most popular form of gambling for men (10%) whereas for women it was playing bingo (7%). All of the other individual gambling activities had participation rates of less than 10%.

Patterns of participation in each individual gambling activity varied by age. For the National Lottery Draw, horse racing and other lotteries, participation was highest among the middle age groups and lowest among those aged 16-24 and 75 and over (replicating the pattern seen for all past year gambling activity seen in Figure 2.1)

With the exception of bingo, for most other activities prevalence was higher among younger age groups and generally declined with age. For example, the prevalence of playing machines in a bookmakers was highest among those aged 16-24 (8%) and was less than 1% among those aged 75 and over. A similar pattern was seen for table games at a casino (8% and less than 1% respectively) and playing other slot machines (15% and 1% respectively). For these activities, this pattern whereby prevalence rates were higher among younger age groups than older ones was broadly the same for both men and women. For bingo, participation rates did not vary by age. Both

6% of 16-24 year olds and 6% of those 75 or over had played bingo in the past 12 months. This pattern too was similar for both men and women.

Table 2.2

Past year gambling participation, by age and sex

All adults aged 16 and over *2012*

Gambling activity	Age group						
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %
Men							
Lotteries and related products							
National Lottery Draw	33	58	66	64	60	57	43
Scratchcards	29	29	24	15	10	8	6
Other lotteries	7	16	16	12	15	20	17
Machines/games							
Football pools	12	6	2	3	2	4	3
Bingo (not online)	4	4	3	3	3	3	4
Slot machines	21	21	9	6	4	2	2
Machines in a bookmakers	12	10	4	2	1	1	0
Casino table games (not online)	12	11	4	3	2	1	0
Poker played in pubs or clubs	6	6	2	1	0	1	-
Online gambling on slots, casino or bingo games	9	9	5	2	1	0	0
Betting activities							
Online betting with a bookmaker	12	17	9	6	2	2	1
Betting exchange	4	3	1	1	1	1	-
Horse races (not online)	10	15	14	13	11	10	7
Dog races (not online)	4	7	4	2	2	2	2
Sports events (not online)	17	14	8	7	3	3	0
Other events (not online)	4	3	2	1	1	1	0
Spread-betting	2	2	0	1	1	0	0
Private betting	19	14	8	4	3	3	1
Other gambling activity							
Any other gambling	6	3	2	2	1	2	1
Summary							
Any gambling activity	*60*	*72*	*74*	*72*	*69*	*68*	*54*
Any gambling (excluding National Lottery Draw only)	*55*	*58*	*51*	*42*	*37*	*37*	*32*
Any online gambling (excluding National Lottery)	*17*	*22*	*13*	*8*	*4*	*3*	*1*
No gambling in past 12 months	*40*	*28*	*26*	*28*	*31*	*32*	*46*
Women							
Lotteries and related products							
National Lottery Draw	32	53	54	57	57	50	36
Scratchcards	29	28	22	17	15	11	8
Other lotteries	9	12	14	14	18	18	15
Machines/games							
Football pools	2	1	1	0	1	1	1
Bingo (not online)	8	8	7	6	5	9	8
Slot machines	9	6	6	4	2	1	1
Machines in a bookmakers	3	2	1	0	1	0	0
Casino table games (not online)	3	2	1	1	1	0	0
Poker played in pubs or clubs	1	0	0	-	0	0	0
Online gambling on slots, casino or bingo games	3	3	2	1	2	0	0
Betting activities							
Online betting with a bookmaker	3	4	2	1	1	1	1
Betting exchange	-	0	0	0	0	0	0
Horse races (not online)	8	13	9	9	8	5	3
Dog races (not online)	3	3	2	2	1	1	1
Sports events (not online)	1	3	2	1	1	0	1
Other events (not online)	0	1	0	0	0	0	0
Spread-betting	0	0	0	-	-	0	0

Table 2.2 (continued)

Past year gambling, by age and sex

All adults aged 16 and over *2012*

Gambling activity	Age group						
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %
Private betting	2	5	3	2	2	1	1
Other gambling activity							
Any other gambling	1	1	0	1	1	0	0
Summary							
Any gambling activity	52	66	65	66	66	62	51
Any gambling (excluding National Lottery Draw only)	45	46	42	39	37	35	29
Any online gambling (excluding National Lottery)	6	7	4	2	3	1	1
No gambling in past 12 months	48	34	35	34	34	38	49
All							
Lotteries and related products							
National Lottery Draw	32	56	60	60	58	53	39
Scratchcards	29	29	23	16	12	10	7
Other lotteries	8	14	15	13	17	19	16
Machines/games							
Football pools	7	4	1	2	1	2	2
Bingo (not online)	6	6	5	4	4	6	6
Slot machines	15	14	8	5	3	2	1
Machines in a bookmakers	8	6	3	1	1	0	0
Casino table games (not online)	8	6	3	2	1	1	0
Poker played in pubs or clubs	4	3	1	0	0	0	0
Online gambling on slots, casino or bingo games	6	6	3	2	2	0	0
Betting activities							
Online betting with a bookmaker	7	11	5	4	2	1	1
Betting exchange	2	2	1	1	0	1	0
Horse races (not online)	9	14	11	11	10	7	5
Dog races (not online)	4	5	3	2	2	1	1
Sports events (not online)	9	9	5	4	2	1	1
Other events (not online)	2	2	1	1	1	0	0
Spread-betting	1	1	0	0	0	0	0
Private betting	11	10	5	3	3	2	1
Other gambling activity							
Any other gambling	3	2	1	1	1	1	1
Summary							
Any gambling activity	*56*	*69*	*70*	*69*	*68*	*65*	*52*
Any gambling (excluding National Lottery Draw only)	*50*	*52*	*47*	*40*	*37*	*36*	*30*
Any online gambling (excluding National Lottery)	*11*	*15*	*8*	*5*	*3*	*2*	*1*
No gambling in past 12 months	*44*	*31*	*30*	*31*	*32*	*35*	*48*
Bases (unweighted) [a]							
Men	*474*	*605*	*856*	*928*	*880*	*877*	*482*
Women	*616*	*904*	*1128*	*1184*	*1034*	*895*	*673*
All	*1090*	*1509*	*1984*	*2112*	*1914*	*1772*	*1155*
Bases (weighted) [a]							
Men	*862*	*973*	*996*	*992*	*829*	*591*	*425*
Women	*843*	*968*	*1007*	*1011*	*852*	*633*	*569*
All	*1705*	*1941*	*2003*	*2004*	*1681*	*1224*	*994*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.2 Past year gambling prevalence, by ethnic group

Overall prevalence by ethnic group

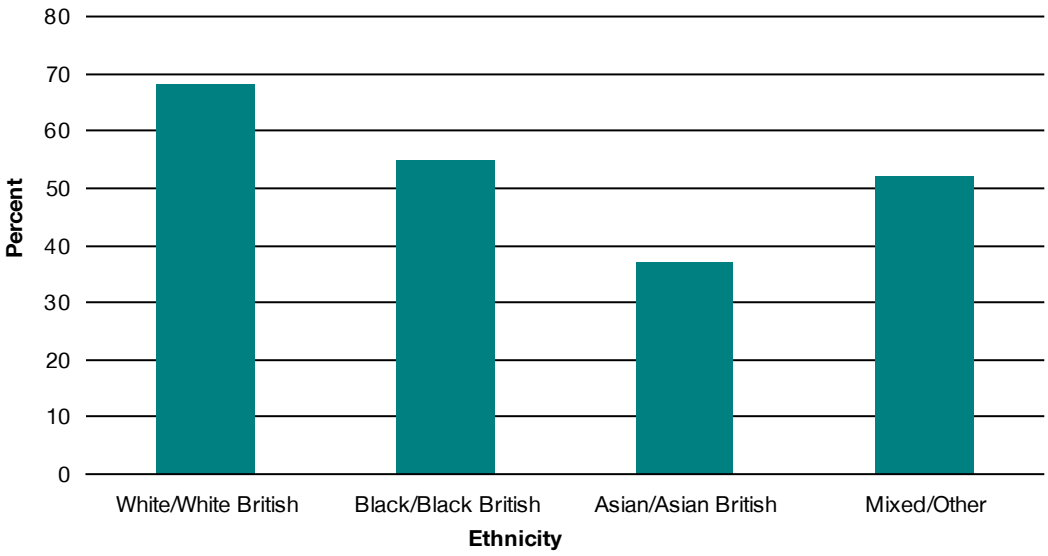
Figure 2.2 shows how past year gambling prevalence varied by the ethnic group of the respondent. Those who were White/White British were most likely to have taken part in gambling, with 68% having gambled in the past 12 months. Black/Black British respondents were next, with 55% having gambled in the past year, and Asian/Asian British respondents were the least likely, with only 37% having spent money on gambling in the past 12 months.

The same pattern was observed with National Lottery only play excluded from the analysis.

Figure 2.2

Participation in gambling activities in the past 12 months, by ethnic group

Base: All aged 16 and over



Participation in individual activities by ethnic group

The National Lottery Draw was the most popular activity for all ethnic groups. It was most popular among White/White British adults (55%), followed by Black/Black British adults (43%), with Asian/Asian British adults having the lowest levels of participation in the past 12 months (27%).[2]

A similar pattern emerged for spending money on scratchcards, other lotteries and horse racing, whereby prevalence rates were highest among White/White British adults and lowest among Asian/Asian British adults. For example, 20% of White/White British adults had bought a scratchcard in the past 12 months, compared with 16% of those who were Black/Black British, 14% of those who were of mixed/other ethnic origin and just 10% of Asian/Asian British adults.

However, slightly different patterns were seen for spread-betting, private betting and bingo. Spread-betting is a minority pursuit, but participation rates were higher among those from Asian/Asian British groups (2%) and lower among all other groups, whose participation rates were close to 0%. In the case of bingo and private betting, participation rates were lowest among those from Black/Black British groups (just 1% for both activities).

There were a number of activities where participation rates did not vary significantly by ethnicity. This was the case with the football pools, slot machines, machines in bookmakers, casino table games, poker played in pubs or clubs, online gambling on slots, casino or bingo games, online betting with a bookmaker, betting exchange, dog races, sports events and other events.

Table 2.3

Past year gambling participation, by ethnic group

All adults aged 16 and over *2012*

Gambling activity	**Ethnic group**			
	White / White British	Black / Black British	Asian / Asian British	Mixed / Other
	%	%	%	%
All				
Lotteries and related products				
National Lottery Draw	55	43	27	39
Scratchcards	20	16	10	14
Other lotteries	15	11	8	11
Machines/games				
Football pools	3	3	2	4
Bingo (not online)	6	1	2	2
Slot machines	7	8	6	9
Machines in a bookmakers	3	2	3	3
Casino table games (not online)	3	2	5	3
Poker played in pubs or clubs	1	-	2	-
Online gambling on slots, casino or bingo games	3	2	3	3
Betting activities				
Online betting with a bookmaker	5	4	2	3
Betting exchange	1	1	1	1
Horse races (not online)	11	3	2	6
Dog races (not online)	3	1	1	1
Sports events (not online)	5	5	2	6
Other events (not online)	1	0	1	1
Spread-betting	0	0	2	0
Private betting	6	1	4	6
Other gambling activity				
Any other gambling	2	-	2	2
Summary				
Any gambling activity	*68*	*55*	*37*	*52*
Any gambling (excluding National Lottery Draw only)	*45*	*34*	*23*	*37*
Any online gambling (excluding National Lottery)	*7*	*8*	*5*	*4*
No gambling in past 12 months	*32*	*45*	*63*	*48*
Bases (unweighted) [a]	*10719*	*186*	*474*	*146*
Bases (weighted) [a]	*10296*	*276*	*752*	*215*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

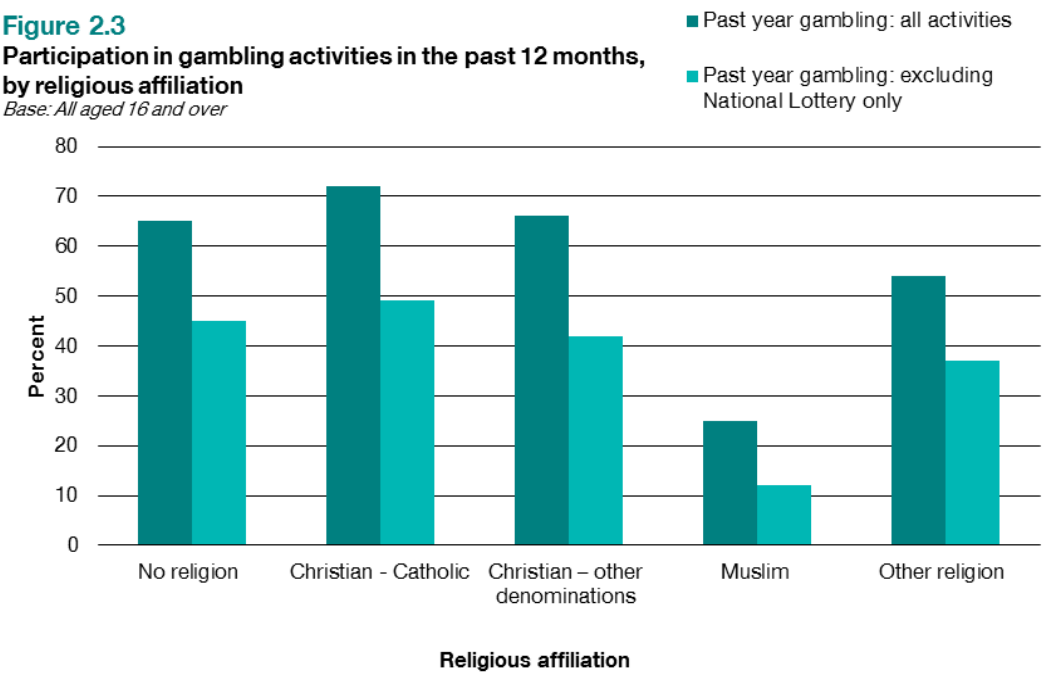
2.2.3 Past year gambling prevalence, by religious affiliation

Overall prevalence by religious affiliation

Figure 2.3 shows past year gambling participation by the religion of the individual. Muslims were least likely to have gambled in the past year than those from other religions, including those with no religion.

The pattern was similar when National Lottery only play was excluded, showing that Muslims were least likely to have gambled in the past 12 months.

Figure 2.3
Participation in gambling activities in the past 12 months, by religious affiliation
Base: All aged 16 and over



Participation in individual activities by religious affiliation

As Table 2.4 shows, participation in many of the individual activities followed the same pattern with prevalence being lowest among Muslims. This was true for the National Lottery Draw, scratchcards, betting on other lotteries, football pools, bingo, online betting with a bookmaker, betting on horse racing, betting on sports events, private betting and any online gambling. For example, 1% of Muslims had bet on horse races, followed by 5% of those from a religion not categorised, 10% of those with no religion, 11% of Christians from a denomination other than Catholic and 12% of Catholic Christians.

This difference was most pronounced for play on other lotteries, horse racing and any online gambling, whereby prevalence rates were at least five times lower among Muslims than all other religions, including those with no religion.

For slot machines, gaming machines in a bookmakers, casino table games, poker in pubs/clubs and online gambling on slots, casinos or bingo style games, rates tended to be lower among Muslims, those belonging to other religious groups or other denomination Christians than those

with no religion. For betting on a betting exchange and spread-betting estimates varied with no clear pattern (largely due to their very low prevalence).

Participation rates did not vary by religion for betting on dog racing and betting on non-sport events.

Table 2.4

Past year gambling, by religious affiliation

All adults aged 16 and over *2012*

Gambling activity	Religion				
	No religion	Christian – Catholic	Christian – other denominations	Muslim	Other religion
	%	%	%	%	%
All					
Lotteries and related products					
National Lottery Draw	51	60	55	17	42
Scratchcards	22	22	17	5	18
Other lotteries	12	17	16	2	15
Machines/games					
Football pools	3	4	2	1	3
Bingo (not online)	5	7	6	1	3
Slot machines	9	8	5	6	6
Machines in a bookmakers	5	4	1	3	3
Casino table games (not online)	4	4	2	2	5
Poker played in pubs or clubs	2	1	1	1	3
Online gambling on slots, casino or bingo games	4	4	2	1	5
Betting activities					
Online betting with a bookmaker	6	6	4	1	3
Betting exchange	1	1	0	1	2
Horse races (not online)	10	12	11	1	5
Dog races (not online)	4	3	3	1	2
Sports events (not online)	6	6	3	1	4
Other events (not online)	1	2	1	1	2
Spread-betting	1	1	0	1	2
Private betting	8	5	3	2	6
Other gambling activity					
Any other gambling	2	2	1	1	3
Summary					
Any gambling activity	*65*	*72*	*66*	*25*	*54*
Any gambling (excluding National Lottery Draw only)	*45*	*49*	*42*	*12*	*37*
Any online gambling (excluding National Lottery)	*9*	*8*	*5*	*1*	*8*
No gambling in past 12 months	*35*	*28*	*34*	*75*	*46*
Bases (unweighted) [a]	*3773*	*1970*	*5102*	*252*	*347*
Bases (weighted) [a]	*3871*	*2202*	*4458*	*418*	*478*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.4 Past year gambling prevalence, by highest educational qualification

Overall prevalence by highest educational qualification

Figure 2.4 shows past year gambling participation by the highest educational qualification of the respondent. People whose highest educational qualifications ranged between GCSEs and below degree level were most likely to have gambled in the past year (68% of those with GCSEs or

A-levels and 69% of those with higher education below degree level). Those with a degree were least likely to have spent money on any form of gambling in the past 12 months (61%).

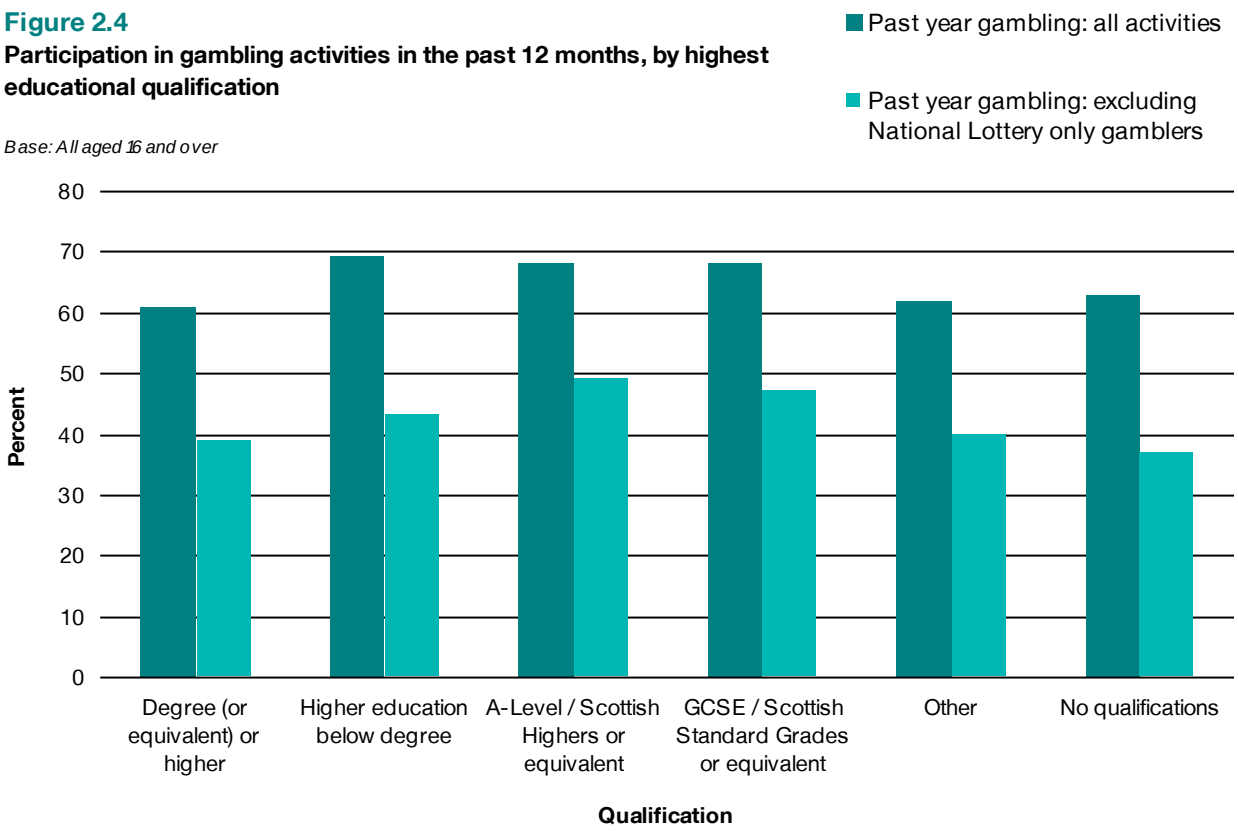
This pattern slightly changed when National Lottery only play was excluded. Those whose highest educational qualifications were GCSEs or A-levels were the most likely to have taken part in gambling activities (47% and 49% respectively), while those with higher education below degree level became less likely to participate (43%). Those with no qualifications were least likely to have spent money on any activity other than the National Lottery Draw (37% had participated in a gambling activity), followed by those with degrees (39%).

The chart below shows prevalence rates by highest educational qualification, both with and without the National Lottery Draw included.

Figure 2.4

Participation in gambling activities in the past 12 months, by highest educational qualification

Base: All aged 16 and over



Participation in individual activities by highest educational qualification

The pattern of participation in the individual activities varied, as Table 2.5 shows. Although for most activities those with no qualification or another qualification were the least likely to participate, this was not always the case. The National Lottery Draw, other lotteries and bingo were least popular among those with a degree or above. In fact, bingo was an activity that was actually most popular among people with no or another qualification (8%).

Those with a highest educational qualification of A-level/ Scottish Highers or equivalent were most likely to have spent money on the football pools, slot machines, machines in bookmakers, casino

table games, private betting, online gambling on slots, casino or bingo games, online betting with a bookmaker, horse racing, sports events or other events.

In the case of poker played in pubs or clubs, the pattern was different. Here, those with a higher education qualification below degree level were most likely to have taken part (3%). There was also a different pattern in the case of spread-betting, where those with a GCSE/ Scottish Standard Grade qualification were most likely to have spent money in the past 12 months (1%) while all the other groups had close to 0% reporting any activity.

There was no significant pattern relating to betting exchange, dog races or any other gambling with highest educational qualification of the respondent.

Table 2.5

Past year gambling, by highest educational qualification

All adults aged 16 and over *2012*

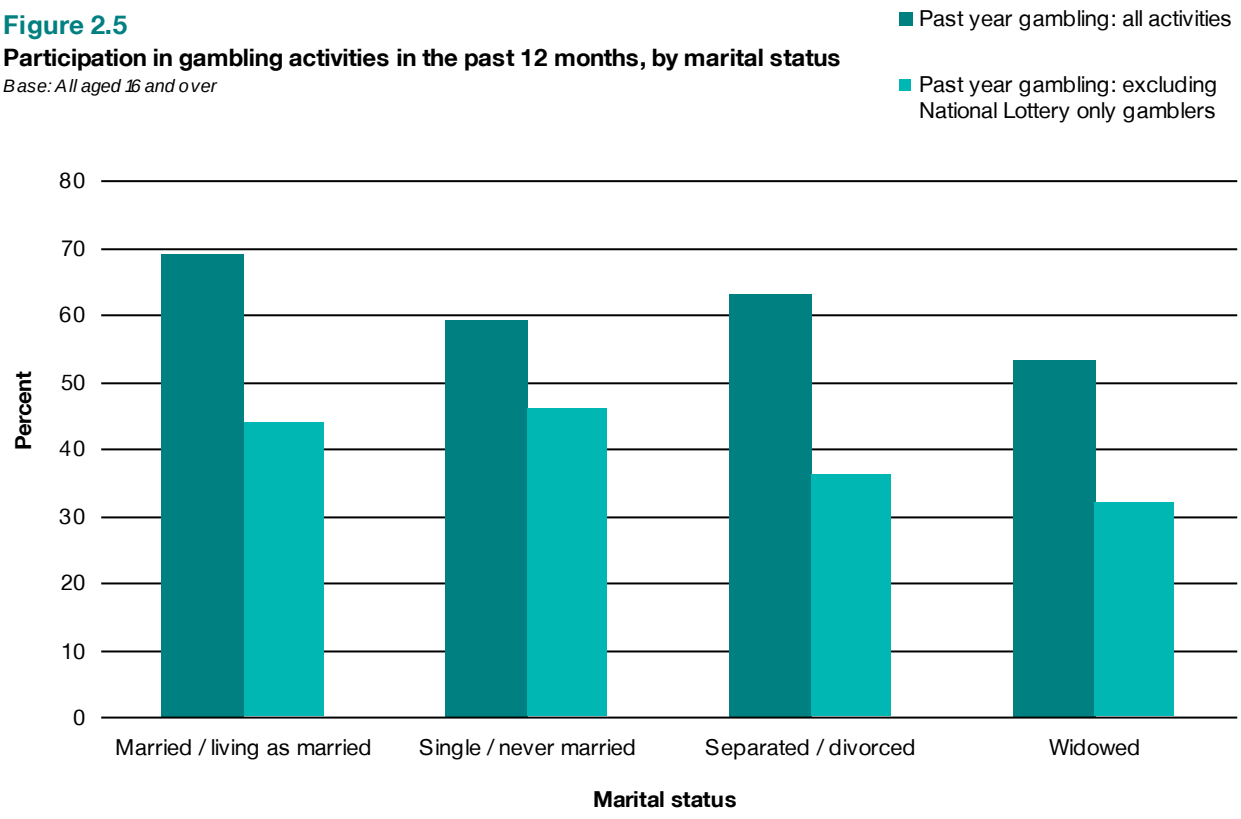
Gambling activity	**Highest educational qualification**					
	Degree (or equivalent) or higher	Higher education below degree	A-level / Scottish Highers or equivalent	GCSE / Scottish Standard Grades or equivalent	Other	No qualifications
	%	%	%	%	%	%
All						
Lotteries and related products						
National Lottery Draw	48	58	52	56	52	51
Scratchcards	15	22	24	24	11	15
Other lotteries	12	16	14	15	23	14
Machines/games						
Football pools	2	3	4	4	2	2
Bingo (not online)	2	6	5	6	8	8
Slot machines	6	9	11	8	2	4
Machines in a bookmakers	2	4	5	3	1	2
Casino table games (not online)	4	5	5	3	1	1
Poker played in pubs or clubs	1	3	2	1	-	0
Online gambling on slots, casino or bingo games	3	4	5	3	1	2
Betting activities						
Online betting with a bookmaker	6	4	7	5	1	2
Betting exchange	1	1	2	1	0	0
Horse races (not online)	11	11	12	11	6	6
Dog races (not online)	3	3	3	3	2	2
Sports events (not online)	4	5	8	5	2	3
Other events (not online)	1	1	2	1	1	1
Spread-betting	0	1	0	1	-	0
Private betting	6	6	8	5	3	2
Other gambling activity						
Any other gambling	2	2	2	2	0	1
Summary						
Any gambling activity	*61*	*69*	*68*	*68*	*62*	*63*
Any gambling (excluding National Lottery Draw only)	*39*	*43*	*49*	*47*	*40*	*37*
Any online gambling (excluding National Lottery)	*8*	*6*	*10*	*8*	*3*	*3*
No gambling in past 12 months	*39*	*31*	*32*	*32*	*38*	*37*
Bases (unweighted) [a]	*3030*	*1297*	*1785*	*2842*	*154*	*2412*
Bases (weighted) [a]	*3081*	*1288*	*2032*	*2837*	*138*	*2162*

2.2.5 Past year gambling prevalence, by marital status

Overall prevalence by marital status

Figure 2.5 shows past year gambling by marital status. Overall, those who were married or living as married were most likely to have taken part in any form of gambling in the past year (69%), while those who were widowed were the least likely to have gambled in the past year (53%). When those who only played the National Lottery were excluded, there was a slightly different pattern. Participation in forms of gambling other than the National Lottery Draw between those who were single (46%) and married (44%) were similar though prevalence was still lowest among widowed respondents (32%). These patterns probably reflect the age profile of these groups (with gambling being less prevalent among older age groups).

Figure 2.5
Participation in gambling activities in the past 12 months, by marital status
Base: All aged 16 and over



Participation in individual activities by marital status

Those who were married or living as married (58%) and divorced or separated (54%) were far more likely to play the National Lottery than single people (40%) or those who had been widowed (40%).

However, for most gambling activities, the pattern by marital status was that single people were most likely to have taken part and those who had been widowed least likely. People who were married or living as married tended to have slightly higher rates than those who were divorced or separated. This pattern was observed for scratchcards, football pools, slot machines, machines in bookmakers, casino table games, poker played in pubs or clubs, online gambling on slots, casino or bingo games, online betting with a bookmaker, betting exchange, sports events, private betting and betting on other events. For example, 8% of single adults had bet on a sports event in the past 12 months compared with 4% of those who were married, 3% of those who were divorced or

separated, and just 1% of those who were widowed. Similarly, 12% of single adults had played on a slot machine compared with 6% of married, 3% of separated, and 2% of widowed adults.

A slightly different pattern was observed for horse racing, other lotteries and spread-betting. For horse racing, there was little difference between those who were married (11%), single (10%) or separated (9%), but, again, widowed adults were the least likely to have taken part in this activity (5%). Other lotteries were popular with married adults (16%) and widowed adults (15%) and least popular among single adults (11%). In the case of spread-betting, 1% of single adults had spread-bet in the past 12 months. For married, separated and widowed respondents, the estimate was 0%.

Finally, for dog racing and bingo, prevalence estimates did not vary significantly by marital status.

Table 2.6

Past year gambling, by marital status

All adults aged 16 and over *2012*

Gambling activity	**Marital status**			
	Married / living as married %	Single / never married %	Separated / divorced %	Widowed %
All				
Lotteries and related products				
National Lottery Draw	58	40	54	40
Scratchcards	19	24	15	8
Other lotteries	16	11	13	15
Machines/games				
Football pools	2	5	1	1
Bingo (not online)	5	5	5	7
Slot machines	6	12	3	2
Machines in a bookmakers	2	7	1	0
Casino table games (not online)	3	6	2	0
Poker played in pubs or clubs	1	3	1	0
Online gambling on slots, casino or bingo games	3	5	1	1
Betting activities				
Online betting with a bookmaker	5	7	1	1
Betting exchange	1	2	1	0
Horse races (not online)	11	10	9	5
Dog races (not online)	3	3	2	1
Sports events (not online)	4	8	3	1
Other events (not online)	1	2	1	0
Spread-betting	0	1	0	0
Private betting	4	10	3	0
Other gambling activity				
Any other gambling	1	3	0	1
Summary				
Any gambling activity	*69*	*59*	*63*	*53*
Any gambling (excluding National Lottery Draw only)	*44*	*46*	*36*	*32*
Any online gambling (excluding National Lottery)	*7*	*10*	*3*	*2*
No gambling in past 12 months	*31*	*41*	*37*	*47*
Bases (unweighted) [a]	*7354*	*2179*	*1126*	*875*
Bases (weighted) [a]	*7081*	*2796*	*1000*	*671*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.6 Past year gambling prevalence, by economic activity

Overall prevalence by economic activity

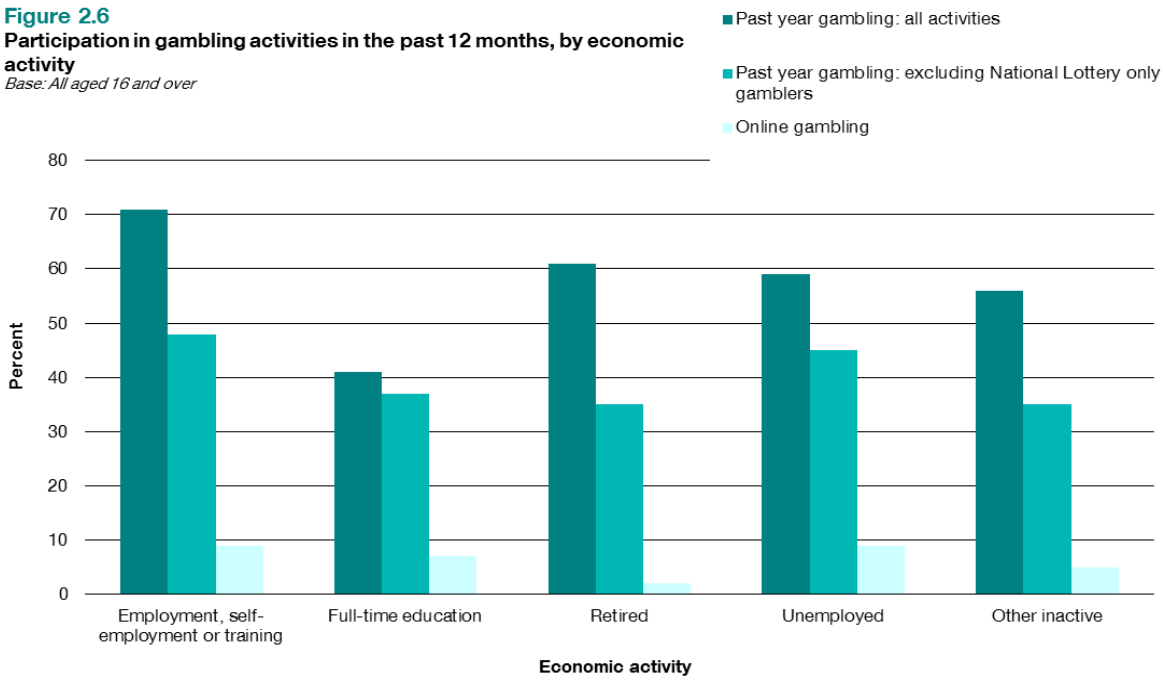
Figure 2.6 shows past year gambling by the economic activity of the respondent. Economic activity was split into five categories: those in employment or training (including self-employment); those in full time education; retired; unemployed; and inactive in some other way (e.g., looking after family or home).

Respondents in employment or training were most likely to have gambled in the past 12 months, with 71% having spent money on any gambling activity. Retired respondents had the second highest overall gambling prevalence, with 61% taking part. Those in full time education had the lowest levels of gambling, with only 41% having gambled in the past 12 months.

When excluding the National Lottery only play from the analysis, the pattern changed. Those in employment or training remained the most likely to have gambled, with 48% having participated in a gambling activity other than the National Lottery Draw in the past year. However, unemployed people were almost as likely to have taken part in some gambling activity, with 45% having done so in the past 12 months. If participation in any online gambling (excluding the National Lottery Draw) is looked at, unemployed respondents were equally as likely to have taken part alongside respondents in employment or training. Nine percent of both groups gambled online in the past 12 months.

Excluding National Lottery only play also meant that retired people fell from being the group with the second highest prevalence of gambling, to being the group least likely (along with other inactive people) to take part in gambling over the past 12 months (35%). They were also the least likely to take part in any online gambling (only 2% had taken part on online gambling in the past 12 months).

Figure 2.6
Participation in gambling activities in the past 12 months, by economic activity
Base: All aged 16 and over



Participation in individual activities by economic activity

The pattern of participation in individual activities by economic activity also varied. The National Lottery Draw was the most popular activity for all the economic activity groups. Those in employment were most likely to have played the lottery, with 61% having done so. Those in full-time education were least likely to have played the lottery, with only 19% reportedly buying a lottery ticket in the past 12 months.

Gambling activities that were most popular among those in employment included online betting with a bookmaker (7%), horse racing (13%), dog racing (4%) and other events (2%). Activities that were most popular with unemployed people included slot machines (12%), machines in a bookmakers (7%), casino table games (6%), online gambling on slots, casino or bingo games (5%) and betting on sports events (9%). Scratchcards were equally popular with both these groups (24% of employed and unemployed people had bought scratchcards in the past 12 months).

Although those in full-time education generally had quite low rates of participation in gambling, they were most likely to play the football pools (5%), to take part in private betting (10%) or to use a betting exchange (2%). Among retired people, other lotteries were popular; 18% had spent money on these in the past 12 months.

Finally, for participation in poker in pubs/clubs, estimates varied but with no clear pattern. There was no significant pattern between playing bingo or spread-betting and economic activity status.

Table 2.7

Past year gambling, by economic activity

All adults aged 16 and over *2012*

Gambling activity	Economic activity				
	In employment, self-employed or training	In full-time education	Retired	Unemployed	Other inactive
	%	%	%	%	%
All					
Lotteries and related products					
National Lottery Draw	61	19	47	41	44
Scratchcards	24	14	9	24	17
Other lotteries	15	6	18	11	10
Machines/games					
Football pools	3	5	2	3	1
Bingo (not online)	5	4	7	4	6
Slot machines	9	9	2	12	6
Machines in a bookmakers	4	3	1	7	2
Casino table games (not online)	4	4	1	6	1
Poker played in pubs or clubs	2	3	0	3	1
Online gambling on slots, casino or bingo games	4	2	0	5	3
Betting activities					
Online betting with a bookmaker	7	4	1	6	2
Betting exchange	1	2	0	1	1
Horse races (not online)	13	6	7	7	6
Dog races (not online)	4	2	2	3	1
Sports events (not online)	6	6	1	9	2
Other events (not online)	2	1	0	1	1
Spread-betting	1	0	0	1	0
Private betting	6	10	2	8	3

Table 2.7 (continued)

Past year gambling, by economic activity

All adults aged 16 and over *2012*

Gambling activity	Economic activity				
	In employment, self-employed or training	In full-time education	Retired	Unemployed	Other inactive
	%	%	%	%	%
All					
Other gambling activity					
Any other gambling	2	3	1	3	1
Summary					
Any gambling activity	*71*	*41*	*61*	*59*	*56*
Any gambling (excluding National Lottery Draw only)	*48*	*37*	*35*	*45*	*35*
Any online gambling (excluding National Lottery)	*9*	*7*	*2*	*9*	*5*
No gambling in past 12 months	*29*	*59*	*39*	*41*	*44*
Bases (unweighted) [a]	*6109*	*458*	*3092*	*561*	*1304*
Bases (weighted) [a]	*6539*	*645*	*2386*	*759*	*1206*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.7 Past year gambling prevalence, by NS-SEC of household reference person

Overall prevalence by NS-SEC of household reference person

Table 2.8 shows past year gambling participation based on the National Statistician's Socio-Economic Classification (NS-SEC) of the household reference person. NS-SEC is a classification of social position that has similarities to the Registrar General's Social Class. Respondents are assigned to an NS-SEC category based on the current or former occupation of the household reference person (formerly the head of household). There was no significant relationship between taking part in gambling overall and the NS-SEC of the household reference person. This was the case with the National Lottery Draw both included and excluded.

Participation in individual activities by NS-SEC of household reference person

However, some individual activities did have a significant relationship with NS-SEC; for example, spending money on scratchcards. Those in living in routine and manual households were most likely to spend money on scratchcards, with 22% having done so in the past 12 months. Only 17% of those living in managerial and professional households had done so. Playing bingo was another activity which had a similar pattern; here, 8% of those living in routine and manual households had played bingo compared with just 4% from managerial and professional households.

Playing casino table games, betting on horse races and private betting had the opposite pattern. Those from managerial and professional households were most likely to have taken part in these activities; for example, 4% had played casino table games, 11% had bet on a horse race and 6% had taken part in private betting. For those from routine and manual households, only 2% had played casino table games, 9% had bet on horse races and 4% had taken part in private betting.

There was no significant pattern between the NS-SEC of the household reference person and spending money on the National Lottery Draw, other lotteries, football pools, slot machines, machines in bookmakers, poker played in pubs or clubs, online gambling on slots, casino or bingo games, online betting with a bookmaker, betting exchange, dog races, sport events, other events and spread-betting.

Table 2.8

Past year gambling, by NS-SEC of household reference person

All adults aged 16 and over *2012*

Gambling activity	**NS-SEC of household reference person**		
	Managerial and professional	Intermediate	Routine and manual
	%	%	%
All			
Lotteries and related products			
National Lottery Draw	51	55	54
Scratchcards	17	21	22
Other lotteries	14	15	15
Machines/games			
Football pools	2	3	3
Bingo (not online)	4	5	8
Slot machines	7	7	7
Machines in a bookmakers	3	3	3
Casino table games (not online)	4	3	2
Poker played in pubs or clubs	1	1	1
Online gambling on slots, casino or bingo games	3	3	3
Betting activities			
Online betting with a bookmaker	6	5	4
Betting exchange	1	1	1
Horse races (not online)	11	10	9
Dog races (not online)	3	3	3
Sports events (not online)	4	5	4
Other events (not online)	1	2	1
Spread-betting	1	1	0
Private betting	6	5	4
Other gambling activity			
Any other gambling	2	2	1
Summary			
Any gambling activity	*64*	*66*	*67*
Any gambling (excluding National Lottery Draw only)	*42*	*42*	*45*
Any online gambling (excluding National Lottery)	*8*	*7*	*6*
No gambling in past 12 months	*36*	*34*	*33*
Bases (unweighted)	*4682*	*2469*	*4121*
Bases (weighted)	*4777*	*2566*	*3837*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

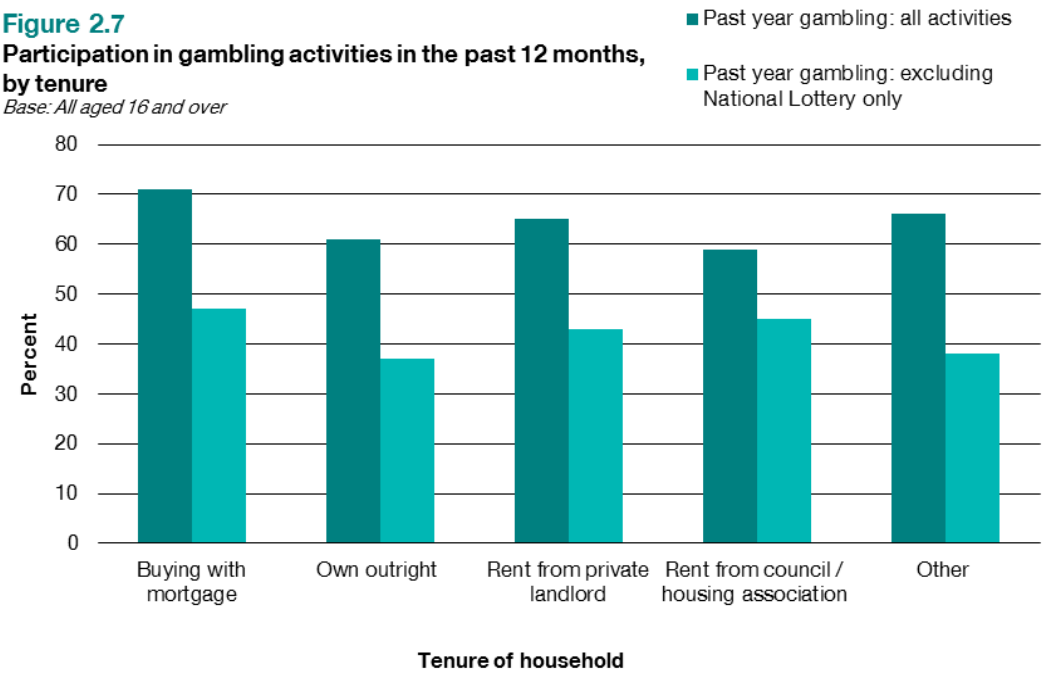
2.2.8 Past year gambling prevalence, by tenure

Overall prevalence by tenure

Figure 2.7 shows past year gambling by tenure of the household. Overall, those buying their house with a mortgage had higher rates of past year gambling participation than other tenure groups.

The same pattern was observed with National Lottery only play excluded, but the difference was less pronounced.

Figure 2.7
Participation in gambling activities in the past 12 months, by tenure
Base: All aged 16 and over



Participation in individual activities by tenure

As shown in Table 2.9, two individual activities followed a similar pattern, whereby participation was higher among the group who were buying their property with a mortgage than other tenure groups: this was true for spend on National Lottery tickets and horse racing. For example, 61% of those buying with a mortgage had purchased tickets for the National Lottery in the past 12 months, whereas for other tenure groups, estimates were 53% or lower.

Spend on scratchcards followed a different pattern, with those who own their house outright being least likely to have participated, and estimates for all other tenure groups being roughly equal. This pattern is most likely influenced by age as prevalence of buying scratchcards was lower among older people.

Those living in households who rent their home privately were most likely to spend money on bingo, with 9% having done so in the past 12 months. Those in living in social housing were most likely to have participated in gaming machine play in a bookmakers and in online gambling on slots, casino or bingo games in the past 12 months (5% for both activities).

Estimates varied with no clear pattern for other lotteries, slot machines, casino table games, poker in pubs/clubs, dog racing, betting on sports events, and private betting.
Finally, for football pools, bets using a betting exchange, betting on non-sport events and spread-betting estimates did not vary by tenure.

Table 2.9

Past year gambling, by tenure
All adults aged 16 and over *2012*

Gambling activity	Tenure				
	Buying with a mortgage / loan	Own outright	Rent from private landlord	Rent from council / housing association	Other
	%	%	%	%	%
All					
Lotteries and related products					
National Lottery Draw	61	49	50	44	53
Scratchcards	23	11	23	23	20
Other lotteries	14	16	13	12	11
Machines/games					
Football pools	3	2	3	4	2
Bingo (not online)	4	5	9	5	7
Slot machines	9	4	7	10	5
Machines in a bookmakers	3	2	4	5	1
Casino table games (not online)	4	2	2	5	2
Poker played in pubs or clubs	1	1	2	2	1
Online gambling on slots, casino or bingo games	3	2	3	5	2
Betting activities					
Online betting with a bookmaker	7	3	3	7	3
Betting exchange	1	1	1	1	-
Horse races (not online)	13	9	8	8	5
Dog races (not online)	4	2	3	3	2
Sports events (not online)	6	2	5	7	3
Other events (not online)	1	1	2	1	1
Spread-betting	1	0	1	1	1
Private betting	6	3	4	7	6
Other gambling activity					
Any other gambling	2	1	1	2	-
Summary					
Any gambling activity	*71*	*61*	*65*	*59*	*66*
Any gambling (excluding National Lottery Draw only)	*47*	*37*	*43*	*45*	*38*
Any online gambling (excluding National Lottery)	*9*	*4*	*6*	*10*	*5*
No gambling in past 12 months	*29*	*39*	*35*	*41*	*34*
Bases (unweighted) [a]	*3874*	*3954*	*1926*	*1555*	*210*
Bases (weighted) [a]	*4120*	*3394*	*1778*	*2050*	*187*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.9 Past year gambling prevalence, by household composition

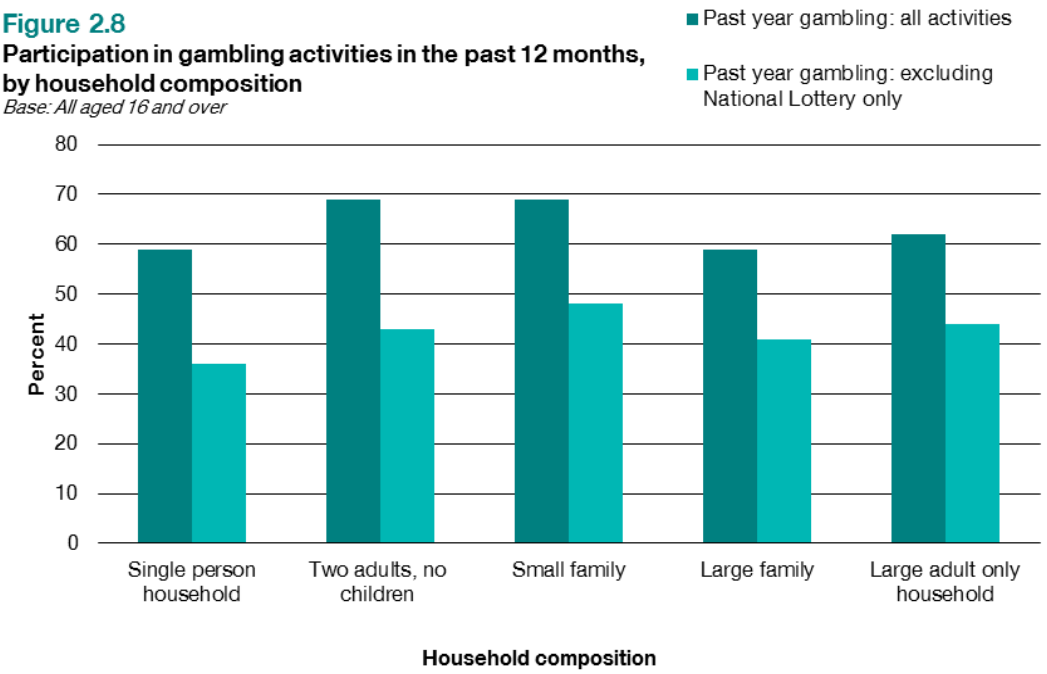
Overall prevalence by household composition

Figure 2.8 shows past year gambling by household composition. Households were divided into five categories: single person households; households with two adults and no children; small family households; large family households; and large adult only households. Gambling was most prevalent among small family households and those with two adults and no children. In both these

categories, 69% of adults had taken part in any gambling activity. It was less prevalent in large family and single person households where only 59% of adults had taken part.

With the National Lottery only play excluded from the analysis, gambling remained most popular among small family households (48%). However, the prevalence among members of households with two adults and no children was no longer as high. Gambling activities were now second highest among large adult only households (44%) which had similar rates to households with two adults and no children (43%).

Figure 2.8
Participation in gambling activities in the past 12 months, by household composition
Base: All aged 16 and over



Participation in individual activities by household composition

Though overall levels of gambling were highest among small family households or those with two adults and no children, there were a number of gambling activities where members of large adult only households were most likely to have taken part. Respondents in a large adult only household were most likely to have spent money on the football pools in the past 12 months, with 4% having done so compared with 3% in small family households and 2% in other types. Similarly, gambling on machines in a bookmakers was more popular among those living in large adult households (5%) as was playing table games in a casino (6% compared with between 2% and 3% for other household types) and playing poker in pubs and clubs (3% compared with no more than 1% in other household types). The same pattern was seen for sports and private betting where 7% of people in large adult only households had reported taking part in the past 12 months.

A different pattern emerged for some of the other activities. The National Lottery Draw remained the most popular gambling activity among all household compositions, but particularly so for small family households, where 59% of adults had taken part. Similarly, 27% of adults in small family households had spent money on scratchcards, and 12% in small family households had bet on horse racing, a higher figure than any other household composition.

For slot machine play and online gambling on slots, casino or bingo games, small family households and large family households were equally likely to have participated (10% and 4% respectively), with higher figures than any other household composition. Households with two adults and no children were most likely to have taken part in other lotteries (18%); prevalence for other households ranged between 11% and 14%.

Bingo, online betting with a bookmaker, betting exchange, dog races, other events and spread-betting had no significant pattern with household composition.

Table 2.10

Past year gambling, by household composition

All adults aged 16 and over *2012*

Gambling activity	**Household composition**				
	Single person household	Two adults, no children	Small family	Large family	Large adult only household
	%	%	%	%	%
All					
Lotteries and related products					
National Lottery Draw	47	57	59	47	47
Scratchcards	12	17	27	22	21
Other lotteries	14	18	14	11	12
Machines/games					
Football pools	2	2	3	2	4
Bingo (not online)	6	6	5	4	5
Slot machines	4	5	10	8	10
Machines in a bookmakers	2	2	3	2	5
Casino table games (not online)	2	2	3	3	6
Poker played in pubs or clubs	1	1	1	1	3
Online gambling on slots, casino or bingo games	2	2	4	2	4
Betting activities					
Online betting with a bookmaker	4	5	6	4	5
Betting exchange	1	1	0	2	1
Horse races (not online)	8	11	12	9	10
Dog races (not online)	2	3	3	2	3
Sports events (not online)	4	4	5	3	7
Other events (not online)	1	1	1	1	1
Spread-betting	1	0	1	1	1
Private betting	4	4	5	5	7
Other gambling activity					
Any other gambling	1	2	1	1	2
Summary					
Any gambling activity	*59*	*69*	*69*	*59*	*62*
Any gambling (excluding National Lottery Draw only)	*36*	*43*	*48*	*41*	*44*
Any online gambling (excluding National Lottery)	*5*	*6*	*9*	*7*	*8*
No gambling in past 12 months	*41*	*31*	*31*	*41*	*38*
Bases (unweighted) [a]	*2253*	*4275*	*2191*	*685*	*2129*
Bases (weighted) [a]	*1872*	*3794*	*2062*	*735*	*3085*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.10 Past year gambling prevalence, by Government Office Region

Overall prevalence by Government Office Region

Table 2.11 shows past year gambling participation by Government Office Region (GOR). Those in the North East were most likely to have taken part in any gambling activity, with 74% of people in that region spending money on gambling activities in the past 12 months, followed by the East Midlands and Scotland (71% and 70% respectively). London had the lowest participation levels with 54% of Londoners taking part in gambling.

This pattern broadly remained when the National Lottery Draw was excluded from the analysis. Gambling activities remained most popular in the North East of England (50%) and least popular in London (35%) and the South East (39%).

Participation in individual activities by Government Office Region

In terms of individual activities, the National Lottery Draw was the most popular gambling activity, and the prevalence of playing the National Lottery by region had a similar pattern to that of all gambling activity combined. It was most popular in the North East where 61% of adults had played the lottery in the past 12 months, compared with only 42% in London, where the National Lottery was the least popular.

This broad pattern was followed for many other activities as well. Other lotteries were also most popular in the North East (17%) and least popular in London (10%). Similarly, people in the North East were most likely to have played bingo in the past 12 months (12%) and people in London and the South West of England were least likely to have done so (3%). The popularity of betting on sports events was highest in the North East (8%) and lowest in London and the South West (3%). Online gambling on slots, casino or bingo games was also most popular in the North East, where 6% of people had taken part in the past 12 months. However, for this activity it was the South West (1%) rather than London (3%) which had the lowest participation rates.

However, not all gambling activities were most popular in the North East. People in the West Midlands were most likely to have spent money on scratchcards in the past 12 months (25%) with London, again, being the region with the least participation in this activity (14%). The football pools were also most popular in the West Midlands, with 5% of people having taken part in the past 12 months. Betting on horse racing was most popular in Yorkshire and The Humber (14%). As with the other activities discussed, it was least popular in London (8%). Private betting was most popular in the East of England (8%) and least popular in the North West, Yorkshire and Scotland (4%).

For almost all of the activities, levels of participation were lowest in London. An exception to this was online betting with a bookmaker and online gambling on slots, casino and bingo games (noted above). Online betting was most popular in London, the North West, East Midlands, West Midlands and Scotland where 6% of people had bet online in the past 12 months. It was least popular in the South West of England (2%).

For slot machines, machines in a bookmakers, casino table games, poker played in pubs or clubs, betting exchange, dog races, spread-betting, betting on other events or any other gambling activity there was no significant pattern by GOR.

Table 2.11

Past year gambling, by Government Office Region

All adults aged 16 and over *2012*

Gambling activity	Government Office Region									
All	North East %	North West %	Yorkshire & the Humber %	East Midlands %	West Midlands %	East of England %	London %	South East %	South West %	Scotland %
Lotteries and related products										
National Lottery Draw	61	55	55	54	58	52	42	49	51	58
Scratchcards	21	19	20	19	25	22	14	21	18	18
Other lotteries	17	15	14	16	17	14	10	14	14	15
Machines/games										
Football pools	4	3	2	2	5	3	2	2	2	5
Bingo (not online)	12	4	7	7	6	5	3	6	3	6
Slot machines	7	8	8	8	9	9	6	7	5	8
Machines in a bookmakers	4	3	3	3	3	3	3	2	2	3
Casino table games (not online)	6	3	3	3	3	3	3	3	2	4
Poker played in pubs or clubs	3	1	1	1	1	2	2	1	0	1
Online gambling on slots, casino or bingo games	6	4	3	4	4	4	3	2	1	3
Betting activities										
Online betting with a bookmaker	5	6	4	6	6	5	6	4	2	6
Betting exchange	1	1	1	1	1	2	1	1	1	1
Horse races (not online)	13	12	14	9	10	11	8	9	8	10
Dog races (not online)	2	3	2	4	3	4	3	2	1	3
Sports events (not online)	8	5	5	5	5	4	3	4	3	7
Other events (not online)	1	1	1	1	1	1	1	1	1	2
Spread-betting	1	0	1	0	0	1	1	0	0	1
Private betting	6	4	4	6	7	8	5	5	5	4
Other gambling activity										
Any other gambling	2	2	1	0	1	2	2	2	1	2
Summary										
Any gambling activity	*74*	*66*	*68*	*68*	*71*	*67*	*54*	*61*	*63*	*70*
Any gambling (excluding National Lottery Draw only)	*50*	*43*	*45*	*45*	*49*	*48*	*35*	*39*	*40*	*45*
Any online gambling (excluding National Lottery)	*9*	*8*	*7*	*9*	*8*	*8*	*8*	*5*	*4*	*8*
No gambling in past 12 months	*26*	*34*	*32*	*32*	*29*	*33*	*46*	*39*	*37*	*30*
Bases (unweighted) [a]	*557*	*1025*	*695*	*648*	*748*	*830*	*843*	*1153*	*717*	*4320*
Bases (weighted) [a]	*520*	*1402*	*1045*	*894*	*1102*	*1102*	*1598*	*1709*	*1073*	*1048*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

2.2.11 Summary

This chapter presents a basic overview of past year gambling by various socio-demographic and economic profiles. The National Lottery Draw remains the most popular form of gambling activity. However, focus alone on past year participation across all forms of gambling masks some interesting associations for certain activities. This is because the National Lottery is by far the most popular activity meaning that patterns overall tend to replicate those seen for the National Lottery. Therefore, this chapter for the first time has included analysis of gambling behaviour by socio-demographic and economic factors excluding National Lottery only play as standard. This reveals some interesting differences in gambling participation. The first is that this alters the age profile of who gambles. With National Lottery play included, those from more middle age groups are more likely to gamble but with National Lottery only play excluded, it is younger age groups who are most likely to participate in other forms of gambling. Activities such as playing machines in a bookmakers, table games in a casino, playing slot machines and online gambling on slot or casino style games were more popular among younger adults.

The second difference revealed is the variation by economic circumstances. For example, when National Lottery only play was excluded from analysis, past year gambling prevalence was just as high among those who were unemployed as those who were employed. In particular, rates of playing slot machines, machines in a bookmakers, gambling online on slots or casino style games and betting on sports events were highest among those who were unemployed. Looking at NS-SEC, those living in routine and manual households had higher prevalence of playing bingo and buying scratchcards, whereas those in living in managerial and professional households had highest rates of playing table games in a casino, betting on horses or private betting. Likewise, those living in social housing, another proxy for relative income deprivation, had the highest rates of playing machines in bookmakers and online gambling on slots and casino style games.

This demonstrates that different types of people engage with certain forms of gambling to different extents. For some activities, participation is more popular among those with poorer socio-economic status, whereas other activities were more popular among those with greater socio-economic status. Just looking at past year participation rates overall therefore masks a great deal of diversity in patterns of gambling behaviour and how it varies for different people in different circumstances.

Notes and References

[1] Throughout this report the terms ‘National Lottery Draw’, ‘National Lottery play’ or buying tickets for the ‘National Lottery’ are use to describe purchasing tickets for the Lotto, Euromillions, Thunderball and other related lottery draw products. Scratchcards are dealt with as a separate category. The term ‘excluding National Lottery only play’ is used as a shorthand to describe those people who only bought tickets for National Lottery draws and did not take part in any other form of gambling.

[2] Asian/Asian British groups include all those who report that they were of Indian, Pakistani, Bangladeshi or Chinese origin.

3 Health and lifestyle profile of gamblers

3.1 Introduction

This is the first time that gambling questions have been included within broader health surveys in Great Britain. This provides the opportunity to explore how gambling behaviour varies by health and different lifestyle factors. This chapter looks at this for past year gambling only. In subsequent chapters the profile of at-risk and problem gamblers by health and lifestyle characteristics is considered. The areas examined were:

General health

- self-assessed general health status
- presence of a longstanding illness
- blood pressure status
- Body Mass Index (BMI) status

Mental health

- General Health Questionnaire (GHQ-12) status[1]
- Warwick-Edinburgh Mental Wellbeing (WEMWBS) score[2]

Smoking and drinking

- cigarette smoking status
- daily cigarette consumption
- alcohol drinking status
- frequency of alcohol consumption
- units of alcohol consumed on heaviest day

Physical activity

- participation in physical activity

Each of these is considered in turn in the sections that follow.

3.2 Past year gambling participation by health and lifestyle characteristics

3.2.1 Past year gambling prevalence, by general health status

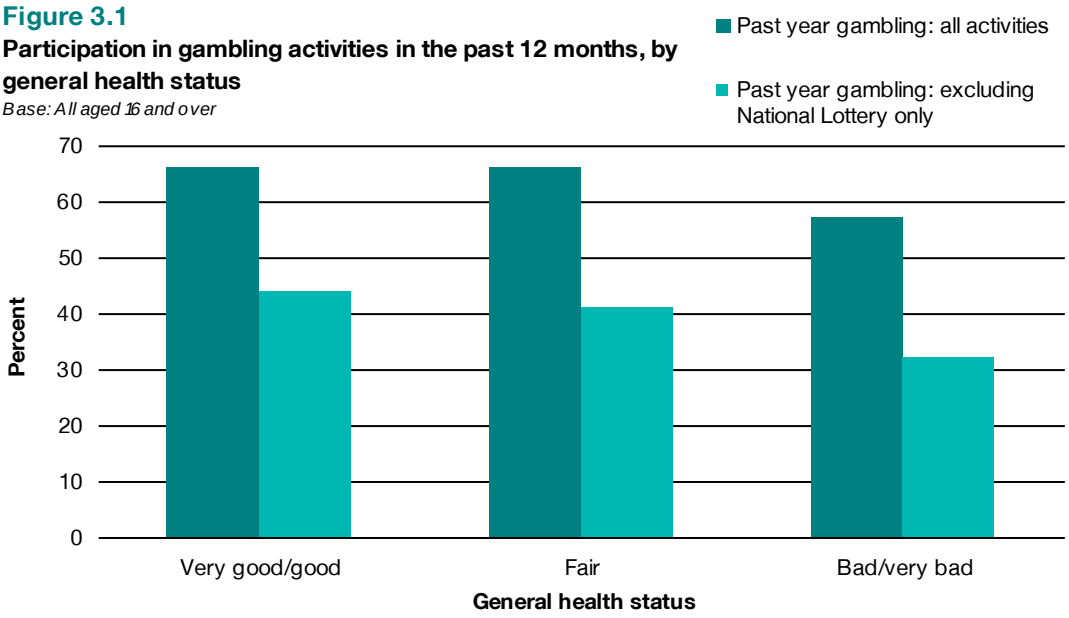
Overall prevalence by general health status

Figure 3.1 shows past year gambling by general health status, as assessed by the respondent. Those who perceived their health to be very good/good or fair were more likely to have gambled in

the past year than those with bad/very bad health (estimates were 66%, 66% and 57% respectively).

The pattern was similar when National Lottery only play was excluded, showing that people in better health were more likely to have gambled in the past 12 months.

Figure 3.1
Participation in gambling activities in the past 12 months, by general health status
Base: All aged 16 and over



Participation in individual activities by general health status

As Table 3.1 shows, participation in many of the individual activities followed the same pattern with prevalence being higher among those with better self-reported health. This was true for scratchcards, football pools, buying National Lottery tickets, playing slot machines, gaming machines in a bookmakers, casino table games, poker in pubs/clubs, online betting with a bookmaker, betting exchanges, betting on horse racing, betting on sports events, private betting and any online gambling. For example, 11% of those with very good/good health had bet on horse races, followed by 9% of those with fair health and 7% of those with bad/very bad health.

This difference was most pronounced for slot machines, casino table games, online betting and any online gambling, whereby prevalence rates were at least twice as high among those with good health as those with poor health.

Participation rates did not vary by general health status for spend on other lotteries, online gambling on slots, casino or bingo games, dog races, betting on other events and spread-betting. Estimates for bingo varied with no clear pattern.

Table 3.1

Past year gambling, by General Health Status

All adults aged 16 and over *2012*

Gambling activity	General Health Status		
	Very good / good %	Fair %	Bad / very bad %
All			
Lotteries and related products			
National Lottery Draw	53	53	46
Scratchcards	20	17	14
Other lotteries	15	14	11
Machines/games			
Football pools	3	2	2
Bingo (not online)	5	7	6
Slot machines	8	6	4
Machines in a bookmakers	3	2	2
Casino table games (not online)	4	2	1
Poker played in pubs or clubs	2	0	1
Online gambling on slots, casino or bingo games	3	2	2
Betting activities			
Online betting with a bookmaker	6	3	2
Betting exchange	1	0	0
Horse races (not online)	11	9	7
Dog races (not online)	3	3	2
Sports events (not online)	5	3	3
Other events (not online)	1	1	1
Spread-betting	1	0	1
Private betting	6	4	2
Other gambling activity			
Any other gambling	2	1	1
Summary			
Any gambling activity	*66*	*66*	*57*
Any gambling (excluding National Lottery Draw only)	*44*	*41*	*32*
Any online gambling (excluding National Lottery)	*8*	*5*	*4*
No gambling in past 12 months	*34*	*34*	*43*
Bases (unweighted) [a]	*8538*	*2117*	*878*
Bases (weighted) [a]	*8869*	*1950*	*730*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.2 Past year gambling prevalence, by longstanding illness

Overall prevalence by longstanding illness

Table 3.2 shows past year gambling by whether the respondent has a longstanding illness, and whether this illness limits their daily activities. Overall, those with a non-limiting longstanding illness (68%) or no longstanding illness (66%) were more likely to have gambled in the past year than those with a longstanding illness that limits daily activities (61%).

This pattern was similar when National Lottery only play was excluded from analysis, although those with no longstanding illness were most likely to take part in other activities.

Participation in individual activities by longstanding illness

Most activities followed a similar pattern, where those without any form of longstanding illness were more likely to participate. This was the case for scratchcards, football pools, slot machines, machines in a bookmakers, casino table games, poker in pubs/clubs, online gambling, online betting, betting on horse races, betting on dog races, betting on sports events and private betting. For some activities, prevalence was lowest among those with a limiting longstanding illness. For example, 22% of those with no longstanding illness had bought scratchcards in the past 12 months compared with 17% of those with a non-limiting longstanding illness and 14% of those with a limiting longstanding illness. This pattern was also observed for National Lottery play. For others, prevalence rates were similarly low among those with any kind of longstanding illness. For example, the prevalence of online gambling on slot or casino style games was 2% for those with any form of longstanding illness and 4% among those with no longstanding illness. The main feature, however, was that participation was higher among those without any type of longstanding illness or disability.

For casino table games, online betting, betting on sports events and private betting the magnitude of the difference was especially marked, with prevalence rates being at least three times higher among those with no longstanding illness than those with a limiting longstanding illness.

Bingo was an anomaly, with those with a limiting longstanding illness being more likely to have participated than those with a non-limiting or no longstanding illness (7%, 5% and 5% respectively).

For participation in other lotteries, betting exchange and betting on non-sport events estimates varied but with no clear pattern. Estimates by presence of a longstanding illness did not vary for spread-betting.

Table 3.2

Past year gambling, by presence of a longstanding illness

All adults aged 16 and over *2012*

Gambling activity	Presence of a longstanding illness		
	Limiting longstanding illness %	Non-limiting longstanding illness %	No longstanding illness %
All			
Lotteries and related products			
National Lottery Draw	49	56	53
Scratchcards	14	17	22
Other lotteries	14	17	14
Machines/games			
Football pools	2	2	3
Bingo (not online)	7	5	5
Slot machines	4	6	9
Machines in a bookmakers	1	1	4
Casino table games (not online)	1	2	4
Poker played in pubs or clubs	0	1	2
Online gambling on slots, casino or bingo games	2	2	4
Betting activities			
Online betting with a bookmaker	2	4	6
Betting exchange	0	1	1
Horse races (not online)	7	10	11
Dog races (not online)	2	2	3

Table 3.2 (continued)

Past year gambling, by presence of a longstanding illness

All adults aged 16 and over *2012*

Gambling activity	Presence of a longstanding illness		
	Limiting longstanding illness	Non-limiting longstanding illness	No longstanding illness
	%	%	%
Sports events (not online)	2	3	6
Other events (not online)	1	0	1
Spread-betting	0	0	1
Private betting	2	4	7
Other gambling activity			
Any other gambling	1	1	2
Summary			
Any gambling activity	*61*	*68*	*66*
Any gambling (excluding National Lottery Draw only)	*36*	*42*	*46*
Any online gambling (excluding National Lottery)	*4*	*5*	*9*
No gambling in past 12 months	*39*	*32*	*34*
Bases (unweighted) [a]	*3107*	*1980*	*6436*
Bases (weighted) [a]	*2482*	*1918*	*7136*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.3 Past year gambling prevalence, by blood pressure status

Overall prevalence by blood pressure status

Respondents were asked to report if they had ever been told by a doctor whether they had high blood pressure and if so, whether they were currently taking medication for high blood pressure. Overall, the prevalence of past year gambling did not vary significantly by blood pressure status.

Excluding National Lottery only play from the analysis also did not highlight any discernible pattern.

Participation in individual activities by blood pressure status

Participation in some individual activities did vary according to self-reported blood pressure status. Spending money on football pools, gaming machines in a bookmakers, slot machine, online betting, casino table games, poker in pubs/clubs, horse races, dog races and betting on sport and private betting were all more popular among those who had never had high blood pressure. For example, 4% of those who had never had high blood pressure had played machines in a bookmakers compared with 2% or less of those who had ever had high blood pressure.

Rates for the National Lottery Draw, scratchcards, other lotteries, online gambling on slots, casino or bingo games, and betting on non-sport events varied but with no clear pattern. Participation in bingo, spread-betting and betting exchanges did not vary by blood pressure status.

Table 3.3

Past year gambling, by blood pressure status

All adults aged 16 and over *2012*

Gambling activity	Blood pressure status		
	Has high blood pressure – takes medication	Has high blood pressure – does not currently take medication	Has never had high blood pressure
	%	%	%
All			
Lotteries and related products			
National Lottery Draw	53	59	52
Scratchcards	11	21	21
Other lotteries	17	14	14
Machines/games			
Football pools	2	1	3
Bingo (not online)	7	6	5
Slot machines	3	7	8
Machines in a bookmakers	1	2	4
Casino table games (not online)	1	2	4
Poker played in pubs or clubs	0	0	2
Online gambling on slots, casino or bingo games	1	3	3
Betting activities			
Online betting with a bookmaker	2	5	6
Betting exchange	0	1	1
Horse races (not online)	8	9	11
Dog races (not online)	1	2	3
Sports events (not online)	2	3	5
Other events (not online)	0	1	1
Spread-betting	0	0	1
Private betting	2	4	6
Other gambling activity			
Any other gambling	1	1	2
Summary			
Any gambling activity	*64*	*69*	*65*
Any gambling (excluding National Lottery Draw only)	*38*	*42*	*44*
Any online gambling (excluding National Lottery)	*3*	*7*	*8*
No gambling in past 12 months	*36*	*31*	*35*
Bases (unweighted) [a]	*2163*	*951*	*8408*
Bases (weighted) [a]	*1764*	*856*	*891*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.4 Past year participation in gambling, by Body Mass Index

Overall prevalence by Body Mass Index

Table 3.4 shows past year gambling by the BMI[3] of the respondent; BMI is a widely accepted measure of weight for height.

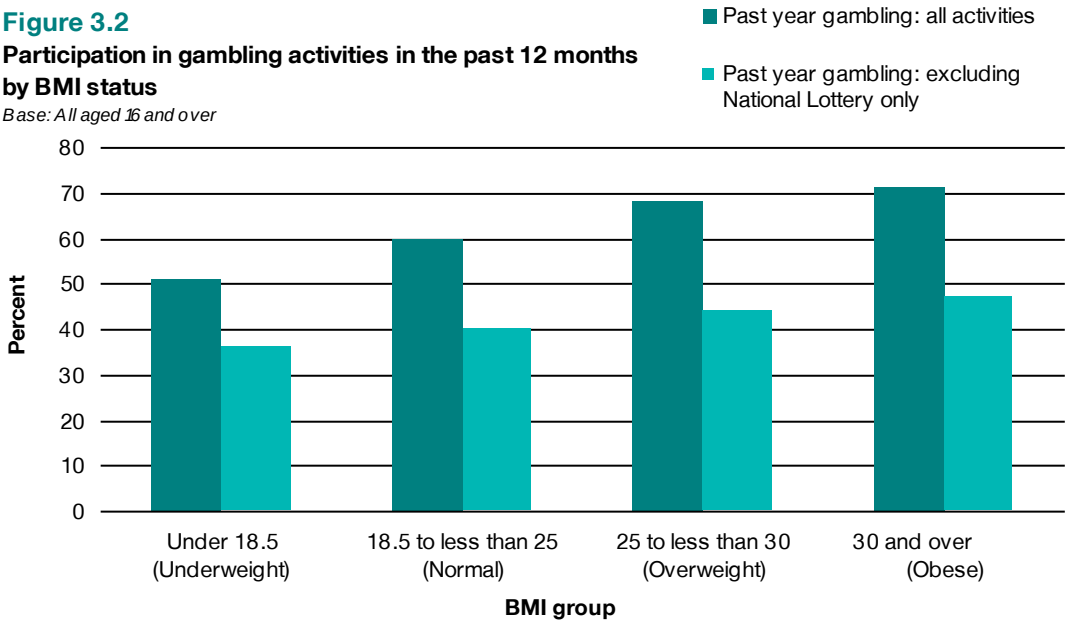
As shown by Figure 3.2, there appeared to be a broadly linear relationship between BMI and gambling, with those with the lowest BMI being least likely to have gambled in the past year and those with higher BMI being more likely to have gambled. 51% of those classified as underweight (BMI of under 18.5) had gambled in the past year, rising to 60% for those with normal weight (BMI

of 18.5 to less than 25) and to 68% for those who were overweight (BMI of 25 to less than 30). Participation rates were highest for those classified as obese (BMI of 30 or more) at 71%. The same pattern was observed even with National Lottery only play excluded.

Figure 3.2

Participation in gambling activities in the past 12 months by BMI status

Base: All aged 16 and over



Participation in individual activities by Body Mass Index

For the National Lottery Draw, scratchcards and other lotteries the pattern by BMI replicated that observed overall, whereby participation in the activity increased as BMI increased.

Bingo displayed a less linear pattern as participation rates among those with a BMI of 30 or less were similar (between 3%-5%), though bingo remained most popular among those with a BMI of 30 or more (8%).

For slot machines the reverse was true with prevalence being higher (12%) among those with a BMI of 18.5 and lower among other BMI groups. For spread-betting and private betting, estimates varied with no clear pattern. Finally, for all other activities estimates did not vary by BMI status.

Table 3.4

Past year gambling, by Body Mass Index

All adults aged 16 and over — *2012*

Gambling activity	Body Mass Index			
	Under 18.5 (Underweight)	18.5 to less than 25 (Normal)	25 to less than 30 (Overweight)	30 and over (Obese)
	%	%	%	%
All				
Lotteries and related products				
National Lottery Draw	27	46	55	59
Scratchcards	14	19	19	22
Other lotteries	7	11	16	18
Machines/games				
Football pools	2	3	3	3
Bingo (not online)	3	5	4	8
Slot machines	12	7	7	8

Table 3.4 (continued)

Past year gambling, by Body Mass Index

All adults aged 16 and over *2012*

Gambling activity	Body Mass Index			
	Under 18.5 (Underweight)	18.5 to less than 25 (Normal)	25 to less than 30 (Overweight)	30 and over (Obese)
	%	%	%	%
All				
Machines in a bookmakers	2	4	3	2
Casino table games (not online)	3	4	4	3
Poker played in pubs or clubs	2	2	1	1
Online gambling on slots, casino or bingo games	2	4	3	3
Betting activities				
Online betting with a bookmaker	8	5	6	4
Betting exchange	0	1	1	1
Horse races (not online)	10	9	11	10
Dog races (not online)	1	3	2	3
Sports events (not online)	3	5	5	4
Other events (not online)	0	1	1	1
Spread-betting	-	1	1	0
Private betting	5	7	5	5
Other gambling activity				
Any other gambling	2	2	2	1
Summary				
Any gambling activity	*51*	*60*	*68*	*71*
Any gambling (excluding National Lottery Draw only)	*36*	*40*	*44*	*47*
Any online gambling (excluding National Lottery)	*10*	*8*	*8*	*7*
No gambling in past 12 months	*49*	*40*	*32*	*29*
Bases (unweighted) [a]	*140*	*3332*	*3840*	*2776*
Bases (weighted) [a]	*172*	*3706*	*3731*	*2537*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.5 Past year gambling prevalence, by GHQ-12 score

Overall prevalence by GHQ-12 score

The 12-item General Health Questionnaire (GHQ-12)[4] is a widely used and validated measure of mental ill health. Table 3.5 shows past year gambling by the GHQ-12 score of the respondent. Overall, those with a score of 0 (indicating no evidence of probable mental ill-health) and 1-3 (indicating less than optimal mental health) were most likely to have taken part in any form of gambling in the past year (66% and 65% respectively). Past year gambling was lowest among those with a GHQ-12 score of 4 or more (indicating probable psychological disturbance or mental ill-health) at 61%.

However, when National Lottery only play was excluded from analysis, prevalence of participating in other forms of gambling was similar and did not vary by GHQ-12 score. This means that those with probable psychological disturbance were just as likely to gamble on other activities as those with no evidence of mental ill health.

Participation in individual activities by GHQ-12 score

The prevalence of buying National Lottery tickets replicated the overall pattern by GHQ-12 score, whereby participation was highest for those with a score of 0-3 and lowest among those with a GHQ-12 score of 4 or above.

For bingo and online gambling on slots, casino or bingo games and spread-betting, prevalence was highest among those with *some* evidence of mental ill-health (score of 1 and over) and lowest among those with no evidence of mental ill-health. For example, 5% of those with a GHQ-12 score of 4 or more and 4% of those with a score of 1-3 had gambled online on slots, casino or bingo games in the past year compared with 2% of those with a score of 0.

For all other activities estimates did not vary by GHQ-12 score.

Table 3.5

Past year gambling, by GHQ-12 score

All adults aged 16 and over *2012*

Gambling activity	**GHQ-12 score**		
	Score 0 %	Score 1-3 %	Score 4+ %
All			
Lotteries and related products			
National Lottery Draw	54	52	47
Scratchcards	20	20	20
Other lotteries	14	14	14
Machines/games			
Football pools	3	3	3
Bingo (not online)	5	6	6
Slot machines	7	8	7
Machines in a bookmakers	3	4	3
Casino table games (not online)	3	3	3
Poker played in pubs or clubs	1	2	1
Online gambling on slots, casino or bingo games	2	4	5
Betting activities			
Online betting with a bookmaker	5	6	4
Betting exchange	1	1	1
Horse races (not online)	10	11	9
Dog races (not online)	3	3	3
Sports events (not online)	5	5	4
Other events (not online)	1	1	1
Spread-betting	0	0	1
Private betting	6	6	4
Other gambling activity			
Any other gambling	1	2	2
Summary			
Any gambling activity	*66*	*65*	*61*
Any gambling (excluding National Lottery Draw only)	*44*	*42*	*42*
Any online gambling (excluding National Lottery)	*7*	*8*	*8*
No gambling in past 12 months	*34*	*35*	*39*
Bases (unweighted) [a]	*6982*	*2591*	*1676*
Bases (weighted) [a]	*6900*	*2650*	*1683*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.6 Past year gambling prevalence, by Warwick-Edinburgh Mental Wellbeing Scale

Overall prevalence by Warwick-Edinburgh Mental Wellbeing Scale

The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)[5] was developed to capture a broad concept of positive mental wellbeing. Table 3.6 shows past year gambling by the WEMWBS score of the respondent, comparing those whose wellbeing score placed them in the lowest 10% for wellbeing with those scoring higher than this.[6] Overall gambling participation varied by wellbeing score, with participation rates being lower among those with a low wellbeing score (61%) and higher among those whose wellbeing score was not classified as low (67%).

However, when National Lottery only play was excluded from analysis, participation in other forms of gambling did not vary by WEMWBS classification.

Participation in individual activities by Warwick-Edinburgh Mental Wellbeing Scale

Participation in the National Lottery Draw, betting on horse races and private betting all replicated the overall pattern, whereby participation was lower among those with a low wellbeing score. Six percent of those with a low wellbeing score had bet on horse races in the past 12 months compared with 11% of those with a wellbeing score not classified as low. For both horse racing and private betting, prevalence rates were at least 1.5 times higher among those with a low wellbeing score than those whose wellbeing score was not classified as low.

For bingo, the reverse was true, with prevalence rates being higher among those with a low wellbeing score (7% compared with 5%). For all other activities, estimates did not vary by the WEMWBS classification.

Table 3.6

Past year gambling, by Warwick-Edinburgh Mental Wellbeing Score

All adults aged 16 and over — *2012*

Gambling activity	Warwick-Edinburgh Mental Wellbeing Score	
	Low wellbeing score (lowest 10% of scores)	Other wellbeing score
	%	%
All		
Lotteries and related products		
National Lottery Draw	48	55
Scratchcards	19	19
Other lotteries	14	15
Machines/games		
Football pools	2	3
Bingo (not online)	7	5
Slot machines	6	7
Machines in a bookmakers	3	3
Casino table games (not online)	1	4
Poker played in pubs or clubs	1	1

Table 3.6 (continued)

Past year gambling, by Warwick-Edinburgh Mental Wellbeing Score

All adults aged 16 and over — *2012*

Gambling activity	Warwick-Edinburgh Mental Wellbeing Score	
	Low wellbeing score (lowest 10% of scores)	Other wellbeing score
	%	%
All		
Online gambling on slots, casino or bingo games	4	3
Betting activities		
Online betting with a bookmaker	3	5
Betting exchange	0	1
Horse races (not online)	6	11
Dog races (not online)	3	3
Sports events (not online)	4	5
Other events (not online)	0	1
Spread-betting	0	1
Private betting	2	6
Other gambling activity		
Any other gambling	0	2
Summary		
Any gambling activity	*61*	*67*
Any gambling (excluding National Lottery Draw)	*39*	*44*
Any online gambling (exc. National Lottery)	*6*	*7*
No gambling in past 12 months	*39*	*33*
Bases (unweighted) [a]	*917*	*7822*
Bases (weighted) [a]	*689*	*6716*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.7 Past year gambling prevalence, by cigarette smoking status

Overall prevalence by cigarette smoking status

Table 3.7 shows past year gambling by cigarette smoking status. Overall, current smokers had higher rates of past year gambling participation than non-smokers (72% and 63% respectively). The same pattern was observed with National Lottery only play excluded, with 51% of smokers and 41% of non-smokers having participated in other gambling activities in the past 12 months.

Participation in individual activities by cigarette smoking status

Most activities followed a similar pattern, whereby participation was higher among smokers than non-smokers. This was true for spend on National Lottery tickets, scratchcards, bingo, slot machines, gaming machines in a bookmakers, casino table games, poker in pubs/clubs, online

gambling on slots, casino or bingo games, dog racing, betting on sport events and private betting. For example, 5% of smokers had played gaming machines in a bookmakers in the past 12 months, whereas only 2% of non-smokers had done so.

The magnitude of the difference for scratchcards, slot machines, gaming machines, casino table games, poker in pubs/clubs, dog racing, betting on sports events and private betting was greater than for other activities, with prevalence rates being least one and a half times higher among smokers than non-smokers.

Finally, for other lotteries, football pools, online betting, bets using a betting exchange, horse racing, non-sport events and spread-betting estimates did not vary by smoking status.

Table 3.7

Past year gambling, by cigarette smoking status

All adults aged 16 and over *2012*

Gambling activity	Cigarette smoking status	
	Smoker	Non-smoker
	%	%
All		
Lotteries and related products		
National Lottery Draw	58	51
Scratchcards	31	17
Other lotteries	14	14
Machines/games		
Football pools	3	3
Bingo (not online)	7	5
Slot machines	11	6
Machines in a bookmakers	5	2
Casino table games (not online)	5	3
Poker played in pubs or clubs	3	1
Online gambling on slots, casino or bingo games	4	3
Betting activities		
Online betting with a bookmaker	5	5
Betting exchange	1	1
Horse races (not online)	11	10
Dog races (not online)	4	2
Sports events (not online)	6	4
Other events (not online)	1	1
Spread-betting	1	1
Private betting	8	5
Other gambling activity		
Any other gambling	2	2

Table 3.7 (continued)

Past year gambling, by cigarette smoking status

All adults aged 16 and over — *2012*

Gambling activity	Cigarette smoking status	
	Smoker	Non-smoker
	%	%
All		
Summary		
Any gambling activity	*72*	*63*
ny gambling (excluding National Lottery Draw)	*51*	*41*
Any online gambling (excluding National Lottery)	*9*	*7*
No gambling in past 12 months	*28*	*37*
Bases (unweighted) [a]	*2347*	*9155*
Bases (weighted) [a]	*2306*	*9184*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.8 Past year gambling prevalence, by daily cigarette consumption

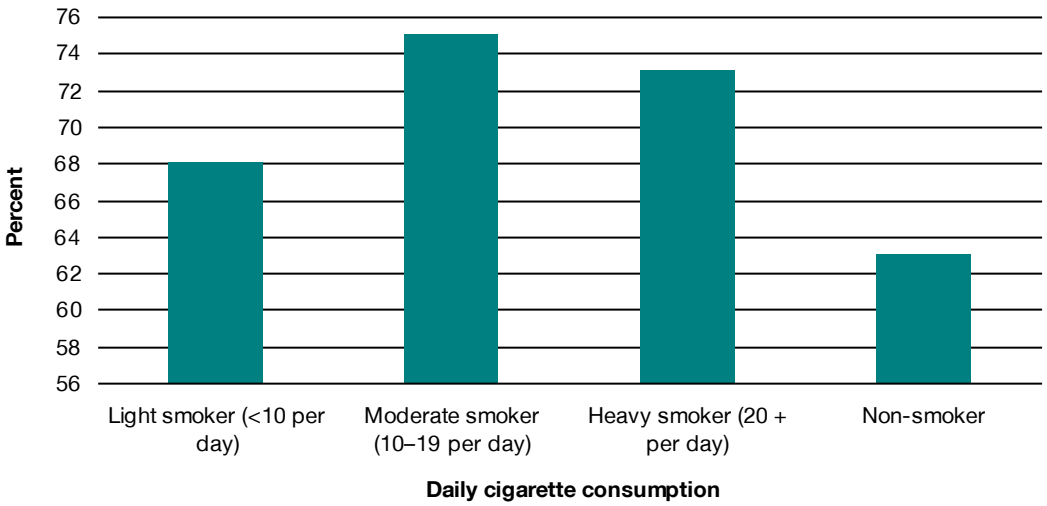
Overall prevalence by daily cigarette consumption

Table 3.8 shows past year gambling by cigarette consumption. For this analysis, cigarette consumption has been classified into light, moderate and heavy: light smokers were classified as smoking fewer than ten cigarettes per day; moderate smokers between ten and 19 and heavy smokers 20 or more cigarettes per day. These descriptors are used for brevity rather than an endorsement that up to nine cigarettes per day equates to 'light' smoking.

Figure 3.3

Participation in gambling activities in the past 12 months, by daily cigarette consumption

Base: All aged 16 and over



As shown by Figure 3.3, gambling participation varied by whether the respondent was classified as a light, moderate or heavy smoker, with rates being higher among those who were moderate or heavy smokers. Observations when National Lottery only play was excluded from the analysis showed no significant variation by cigarette consumption.

Participation in individual activities by daily cigarette consumption

The only individual activities where participation rates varied by cigarette consumption were bingo and online gambling on slots, casino or bingo games, for which participation rates were highest among both moderate and heavy smokers and lower among light smokers. For example, 9% of heavy and 8% of moderate smokers had played bingo in the past 12 months, whereas 5% of light smokers had done so. Participation in scratchcards varied by daily cigarette consumption, with prevalence being higher among moderate smokers. For all other activities estimates did not vary by cigarette consumption.

Table 3.8

Past year gambling, by daily cigarette consumption

All adults aged 16 and over *2012*

Gambling activity	Number of cigarettes smoked per day			
	Light smoker (under 10 per day) %	Moderate smoker (10–19 per day) %	Heavy smoker (20 or more per day) %	Non-smoker %
All				
Lotteries and related products				
National Lottery Draw	55	62	57	51
Scratchcards	29	36	26	17
Other lotteries	13	15	13	14
Machines/games				
Football pools	3	3	3	3
Bingo (not online)	5	8	9	5
Slot machines	12	11	10	6
Machines in a bookmakers	5	6	5	2
Casino table games (not online)	5	5	3	3
Poker played in pubs or clubs	2	3	2	1
Online gambling on slots, casino or bingo games	3	5	6	3
Betting activities				
Online betting with a bookmaker	5	5	6	5
Betting exchange	0	1	1	1
Horse races (not online)	9	11	13	10
Dog races (not online)	3	5	5	2
Sports events (not online)	6	6	7	4
Other events (not online)	1	1	2	1
Spread-betting	0	1	1	1
Private betting	9	7	7	5
Other gambling activity				
Any other gambling	2	1	3	2
Summary				
Any gambling activity	*68*	*75*	*73*	*63*
Any gambling (excluding National Lottery Draw only)	*49*	*54*	*52*	*41*
Any online gambling (excluding National Lottery)	*7*	*9*	*11*	*7*
No gambling in past 12 months	*32*	*25*	*27*	*37*
Bases (unweighted) [a]	*730*	*1018*	*567*	*9159*
Bases (weighted) [a]	*819*	*969*	*500*	*9191*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.9 Past year gambling prevalence, by alcohol drinking status

Overall prevalence by alcohol drinking status

Table 3.9 shows past year gambling by alcohol drinking status. Overall, past year gambling prevalence varied by whether the respondent was a current alcohol drinker or not, with past year gambling rates being higher among current drinkers (69%) and lower among non-drinkers (43%). The same pattern was observed when National Lottery only play was excluded.

Participation in individual activities by alcohol drinking status

With the exception of poker in pubs/clubs, betting exchanges, betting on other events and spread-betting, where rates did not vary by current drinking status, prevalence of participation for all activities was higher among current drinkers than non-drinkers.

For football pools, casino table games, online gambling on slots, casino or bingo, online betting, horse racing, dog racing and private betting the difference was greater than for other activities. For all these activities, prevalence rates were at least three times higher among current drinkers than non-drinkers.

Table 3.9

Past year gambling, by alcohol drinking status

All adults aged 16 and over — *2012*

Gambling activity	Drinking status	
	Current drinker	Non-drinker
All	%	%
Lotteries and related products		
National Lottery Draw	56	31
Scratchcards	21	12
Other lotteries	15	9
Machines/games		
Football pools	3	1
Bingo (not online)	6	3
Slot machines	8	4
Machines in a bookmakers	3	2
Casino table games (not online)	4	1
Poker played in pubs or clubs	1	1
Online gambling on slots, casino or bingo games	3	1
Betting activities		
Online betting with a bookmaker	6	1
Betting exchange	1	1
Horse races (not online)	11	3
Dog races (not online)	3	1
Sports events (not online)	5	2
Other events (not online)	1	1
Spread-betting	1	1
Private betting	6	2
Other gambling activity		
Any other gambling	2	1
Summary		
Any gambling activity	*69*	*43*

Table 3.9 (continued)

Past year gambling, by alcohol drinking status

All adults aged 16 and over — *2012*

Gambling activity	**Drinking status**	
	Current drinker	Non-drinker
All	%	%
Any gambling	*46*	*26*
(excluding National Lottery Draw)		
Any online gambling	*8*	*3*
(excluding National Lottery)		
No gambling in past 12 months	*31*	*57*
Bases (unweighted)[a]	*9859*	*1649*
Bases (weighted)[a]	*9880*	*1619*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.10 Past year gambling prevalence, by frequency of alcohol consumption

Overall prevalence by frequency of alcohol consumption

Table 3.10 shows past year gambling by frequency of alcohol consumption in the past year.

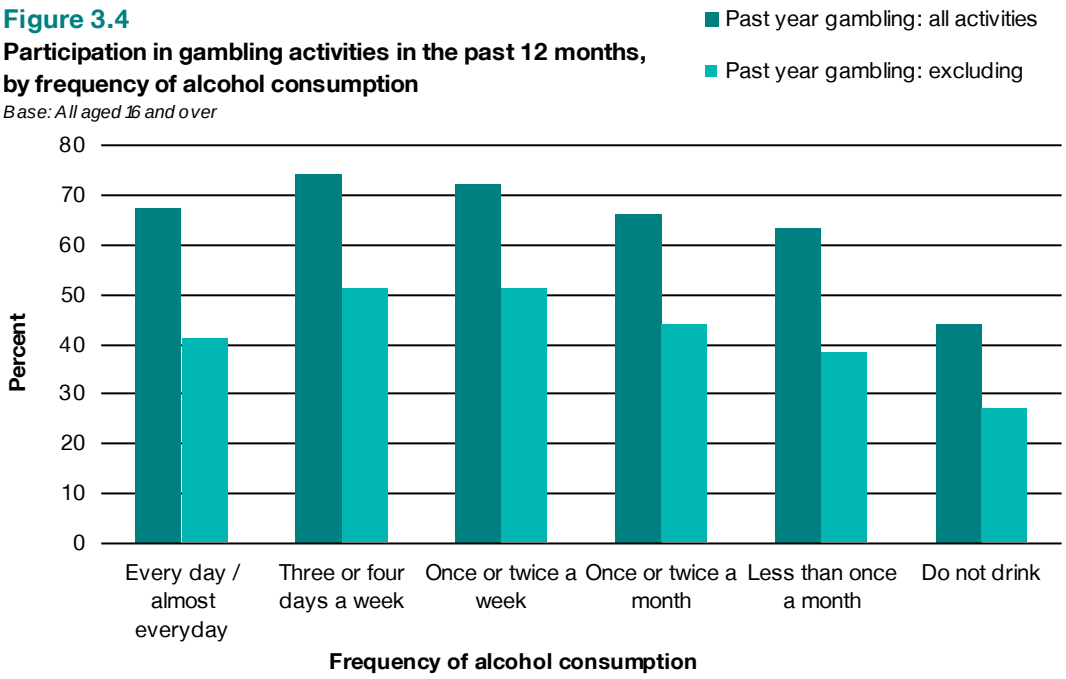
As shown by Figure 3.4, past year participation rates tended to be higher among those who consumed alcohol more frequently and lower among those who drank less often. For example, 74% of those who drank on three or four days per week and 72% of those who drank once or twice per week had gambled in the past 12 months. This compared with 66% of those who drank once or twice a month and 63% who drank less than once a month.

The same pattern was observed for overall participation in other gambling activities, excluding National Lottery only play.

Figure 3.4

Participation in gambling activities in the past 12 months, by frequency of alcohol consumption

Base: All aged 16 and over



Participation in individual activities by frequency of alcohol consumption

For the National Lottery Draw, slot machines, casino table games, online betting and general online gambling, prevalence rates were higher among those who consumed alcohol on between one and four days per week and were lowest among non-drinkers, infrequent drinkers and those who drank almost every day.

For horse racing, betting on sport events and private betting, participation rates tended to be similar to the overall pattern: higher among those who consumed alcohol more often than those who did not. However, for bingo a different pattern was evident as participation was lowest among those who drank the most frequently and highest among infrequent drinkers.

For casino table games, online betting and horse racing the difference was particularly acute. For these three activities, prevalence rates were at least five times higher among those who drank on three or four days per week than those who did not drink.

For spread-betting and football pools, estimates did not vary by frequency of alcohol consumption. For all remaining activities estimates varied with no clear pattern.

Table 3.10

Past year gambling, by frequency of alcohol consumption

All adults aged 16 and over *2012*

Gambling activity	Frequency of alcohol consumption					
	Every day / almost everyday %	Three or four days a week %	Once or twice a week %	Once or twice a month %	Less than once a month %	Do not drink %
All						
Lotteries and related products						
National Lottery Draw	55	60	59	53	52	32
Scratchcards	16	21	24	21	19	13
Other lotteries	16	16	17	14	13	9
Machines/games						
Football pools	3	3	4	3	2	1
Bingo (not online)	3	4	7	6	6	4
Slot machines	7	9	9	8	6	4
Machines in a bookmakers	3	3	4	4	1	2
Casino table games (not online)	3	5	4	3	1	1
Poker played in pubs or clubs	1	2	2	2	0	1
Online gambling on slots, casino or bingo games	3	4	4	4	2	1
Betting activities						
Online betting with a bookmaker	4	8	7	4	3	1
Betting exchange	1	2	1	1	0	1
Horse races (not online)	12	17	14	8	5	3
Dog races (not online)	3	3	4	3	1	1
Sports events (not online)	5	7	7	3	2	2
Other events (not online)	1	2	1	1	0	1
Spread-betting	1	1	1	0	0	1
Private betting	7	7	7	5	3	2
Other gambling activity						
Any other gambling	1	2	3	1	1	1
Summary						
Any gambling activity	*67*	*74*	*72*	*66*	*63*	*44*
Any gambling (excluding National Lottery Draw only)	*41*	*51*	*51*	*44*	*38*	*27*
Any online gambling (excluding National Lottery)	*6*	*11*	*10*	*7*	*4*	*3*
No gambling in past 12 months	*33*	*26*	*28*	*34*	*37*	*56*
Bases (unweighted) [a]	*1472*	*1606*	*3187*	*1602*	*1878*	*1756*
Bases (weighted) [a]	*1481*	*1686*	*3121*	*1604*	*1850*	*1749*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.11 Past year gambling prevalence, by units of alcohol consumed on heaviest drinking day

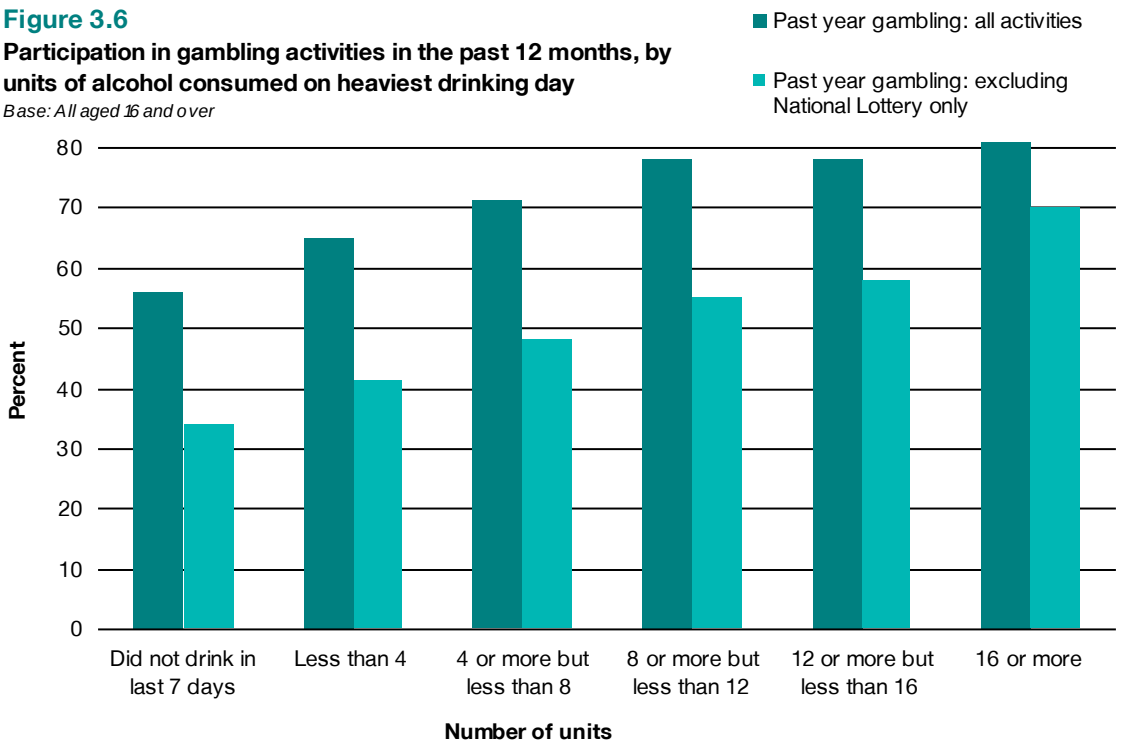
Overall prevalence by units of alcohol consumed on heaviest drinking day

All respondents who had drunk alcohol in the seven days preceding interview were ask to report the number of units of alcohol they consumed on the day that they drank the most. Table 3.11 shows past year gambling by the number of units of alcohol drunk on the respondent's heaviest drinking day over the past seven days. Overall, rates of past year gambling increased as the number of units of alcohol consumed increased. This is shown in Figure 3.5. The same pattern was observed for gambling in other activities, excluding National Lottery only play.

Figure 3.6

Participation in gambling activities in the past 12 months, by units of alcohol consumed on heaviest drinking day

Base: All aged 16 and over



Participation in individual activities by units of alcohol consumed on heaviest drinking day

The majority of activities followed the same pattern displayed in Figure 3.6. For football pools, casino table games, playing poker in a pub/club, betting on dog races, betting on sports events and private betting the difference was particularly notable. For all these activities, prevalence rates were at least six times higher among those who drank 16 or more units of alcohol on the heaviest drinking day than those who had not drank alcohol.

Prevalence rates by number of units of alcohol consumed did not vary for other lotteries and bingo and for bets using a betting exchange varied by units of alcohol consumed but with no clear pattern.

Table 3.11

Past year gambling, by number of units of alcohol consumed on heaviest drinking day

All adults aged 16 and over *2012*

Gambling activity	Number of units consumed on heaviest drinking day					
	Did not drink in past 7 days %	Drank less than 4 units %	Drank 4 or more but less than 8 units %	Drank 8 or more but less than 12 units %	Drank 12 or more but less than 16 units %	Drank 16 units or more %
All						
Lotteries and related products						
National Lottery Draw	44	54	57	63	65	63
Scratchcards	16	17	20	22	29	37
Other lotteries	11	17	14	19	17	18
Machines/games						
Football pools	2	1	3	4	6	12
Bingo (not online)	5	5	6	6	5	7
Slot machines	6	5	7	11	12	20
Machines in a bookmakers	2	1	3	5	6	11
Casino table games (not online)	2	1	3	6	8	15
Poker played in pubs or clubs	1	1	1	2	5	6
Online gambling on slots, casino or bingo games	2	2	4	5	6	7
Betting activities						
Online betting with a bookmaker	3	3	6	9	12	15
Betting exchange	1	1	1	1	3	3
Horse races (not online)	5	8	13	17	21	27
Dog races (not online)	1	2	3	5	6	9
Sports events (not online)	3	2	4	9	11	20
Other events (not online)	1	0	1	2	3	5
Spread-betting	0	0	0	1	2	3
Private betting	3	4	6	7	11	18
Other gambling activity						
Any other gambling	1	1	1	3	3	5
Summary						
Any gambling activity	*56*	*65*	*71*	*78*	*78*	*81*
Any gambling (excluding National Lottery Draw only)	*34*	*41*	*48*	*55*	*58*	*70*
Any online gambling (excluding National Lottery)	*5*	*4*	*8*	*12*	*15*	*17*
No gambling in past 12 months	*44*	*35*	*29*	*22*	*22*	*19*
Bases (unweighted) [a]	*4568*	*2673*	*2142*	*1070*	*528*	*490*
Bases (weighted) [a]	*4518*	*2674*	*2104*	*1087*	*556*	*542*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

3.2.12 Past year gambling prevalence, by physical activity[7]

Overall prevalence by physical activity

Table 3.12 shows past year gambling participation by whether the respondent had taken part in any physical activity in the past four weeks. Overall, the prevalence of past year gambling did not vary significantly by participation in physical activity.

With National Lottery only play excluded from the analysis, gambling participation did vary by participation in physical activity, being higher among those who had undertaken physical activity in the past four weeks than those who had not (47% and 40% respectively).

Participation in individual activities by physical activity

Most activities followed a similar pattern, with participation being higher among those who had taken part in physical activity than those who had not. The magnitude of the difference was greatest for gaming machines and casino table games, whereby participation rates were three times higher for those who had taken part in physical activity than those who had not.

Bingo stood out as the only activity whereby those who had not taken part in physical activity were more likely to have participated (6%) than those who had (5%).

Rates for the National Lottery Draw and other lotteries did not vary by participation in physical activity.

Table 3.12

Past year gambling, by participation in physical activity in the past four weeks

All adults aged 16 and over *2012*

Gambling activity	Any physical activity in past four weeks	
	Yes	No
All	%	%
Lotteries and related products		
National Lottery Draw	52	53
Scratchcards	21	18
Other lotteries	15	14
Machines/games		
Football pools	4	2
Bingo (not online)	5	6
Slot machines	10	5
Machines in a bookmakers	5	1
Casino table games (not online)	5	2
Poker played in pubs or clubs	2	1
Online gambling on slots, casino or bingo games	4	2
Betting activities		
Online betting with a bookmaker	7	3
Betting exchange	1	1
Horse races (not online)	12	8
Dog races (not online)	3	2
Sports events (not online)	7	3
Other events (not online)	1	1
Spread-betting	1	0
Private betting	7	3
Other gambling activity		
Any other gambling	2	1

Table 3.12

Past year gambling, by participation in physical activity in the past four weeks [a]

All adults aged 16 and over *2012*

Gambling activity	Any physical activity in past four weeks	
	Yes	No
All	%	%
Summary		
Any gambling activity	*66*	*64*
Any gambling (excluding National Lottery Draw only)	*47*	*40*
Any online gambling (excluding National Lottery)	*10*	*4*
No gambling in past 12 months	*34*	*36*
Bases (unweighted)[a]	*5170*	*6366*
Bases (weighted)[a]	*5700*	*5851*

[a] Bases for individual activities vary; those shown are for participation in any gambling activity.

Summary

This chapter presents past year gambling participation by a range of health and lifestyle factors. It shows a number of associations, such as gambling being more prevalent among those who smoke cigarettes, who consume alcohol and those with elevated BMI levels on one hand, but also showing elevated rates of gambling among those who have better rates of mental wellbeing and mental health and among those with better self-reported health on the other. It may be that people who gamble engage in a greater number of health and lifestyle risks though overall they appear to have rather better self-reported health status. Of course, this chapter only shows bi-variate relationships and a number of associations, such as age or socio-economic status, could influence these results. In the next chapter, consideration is given to different types of gamblers and factors associated with past year gambling are modelled simultaneously to take possible confounding influences into account. Therefore, findings in this chapter should be considered alongside those documented in Chapter 4.

Notes and references

[1] Goldberg, D,. Williams, P.A. (1988) *User Guide to the General Health Questionnaire*. Windsor, UK: NFER-Nelson.

[2] Tennant, R,. Hiller, L,. Fishwick, R,. Platt, S,. Joseph S et al. (2007) The Warwick-Edinburgh mental wellbeing scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes,* 5:1-13.

[3] In order to define overweight or obesity, a measurement is required that allows for differences in weight due to height. A widely accepted measure of weight for height is the Body Mass Index (BMI), defined as weight in kilograms divided by the square of the height in metres (kg/m^2). This has been used as a measure of obesity in the HSE series. Since 2011, BMI has been calculated both from valid interviewer-measured height and weight, and from self-estimated height and weight. Adult participants were classified into the following BMI groups according to the World Health Organisation BMI classification.

BMI (kg/m^2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 and over	Obese
40 and over	Morbidly obese

BMI categories of overweight and obese have frequently been combined to show the proportion who are either overweight or obese. For the purpose of this report the categories of obese and morbidly obese have been combined.

[4] A measure of mental ill health was included in both the HSE and SHeS in 2012. The GHQ-12 is a widely used and validated measure of mental health. It was originally intended for use in general practice settings as a screening instrument for general, non-psychotic psychiatric morbidity (probable mental ill health), and should not be used to diagnose specific psychiatric problems.[4] The GHQ-12 was administered via a self-completion booklet. The questionnaire concentrates on the broader components of psychological ill health and consists of 12 items measuring such characteristics as general levels of happiness, depression and self-confidence. Six questions are positively phrased and six questions negatively so. Each of the 12 items is rated on a four-point response scale to indicate whether symptoms of mental ill health are 'not at all present', present 'no more than usual', present 'rather more than usual' or present 'much more than usual'. The maximum score for any individual study participant is 12.

No formal threshold exists for identifying probable mental ill health, with optimal values likely to be specific to the population under study. However, in keeping with previous HSE and SHeS surveys, participants' scores are grouped according to three categories: 0 (indicating no evidence of probable mental ill health), 1-3 (indicating less than optimal mental health), and 4 or more (indicating probable psychological disturbance or mental ill health).

A threshold score of 4 was chosen as the suggested level for identifying 'cases' of mental illness, i.e. individuals with a possible psychiatric illness. Although this threshold is known to generate quite a high level of false positives (individuals who have a score of 4 and above but on psychiatric examination have no psychiatric illness), it was found to be the most suitable cut-off point for the purposes of the HSE and SHeS reports, providing large enough numbers for analysis. There is no universally used 'threshold' score for GHQ-12 because the populations it is used on vary considerably.

[5] A measure of subjective mental wellbeing was included in the survey. The WEMWBS was developed to capture a broad concept of positive mental wellbeing and incorporates both eudaimonic and hedonic perspectives on wellbeing. A eudaimonic perspective on wellbeing relates to people's functioning, social relationships, and perceptions of whether the things they do in life are meaningful or worthwhile. A hedonic perspective on wellbeing focuses on affect, and relates to experience of pleasure, happiness and the avoidance of pain. The WEMWBS has 14 statements which cover psychological functioning, cognitive-evaluative dimensions and affective-emotional aspects of wellbeing. For each statement participants are asked to tick the box that best describes their experience over the previous two weeks. They can answer on a five-point scale: 'None of the time', 'Rarely', 'Some of the time', 'Often', or 'All of the time'. The statements are all expressed positively – for example, 'I've been feeling optimistic about the future'. The responses, numbered 1 to 5, are aggregated to form the Wellbeing Index, which can range from 14 (those who answer 'Rarely' on every statement) to 70 (those who answer 'All of the time' to all statements).

[6] Having a low wellbeing score was defined as having a WEMWBS score in the lowest 10% of all scores (see HSE 2012. http://www.hscic.gov.uk/catalogue/PUB13218).

[7] Due to differences in the way levels of physical activity were measured in the HSE and SHeS, it was not possible to include more detailed analysis on physical activity in this study, other than whether someone had taken part in any physical activity in the past four weeks.

4 Types of gamblers

4.1 Introduction

Gambling behaviour is heterogeneous and many people who gamble take part in a range of activities. To explore this further, this chapter presents results from a Latent Class Analysis (LCA) which can be used to identify how gambling behaviours cluster into groups of gambling types. This is based on individual response patterns to the gambling participation questions. Using LCA, respondents are grouped into homogeneous categories or classes based on their gambling profile. LCA has advantages over traditional clustering methods, allowing for membership of classes to be assigned on the basis of statistical probabilities. The process of classification allows the identification of those behaviours which cluster together and the labelling of the classes in a manner which is meaningful and interpretable.

A key question in exploratory LCA is how many classes the sample should be divided into. There is no definitive method of determining the optimal number of classes. Because models with different numbers of latent classes are not nested, this precludes the use of a difference likelihood-ratio test. Therefore, we must rely on measures of fit such as Akaike's Information Criterion (AIC) and the Bayesian Information Criterion (BIC). In comparing different models with the same set of data, models with lower values of these information criteria are preferred. Furthermore, the resulting classes have to be interpreted. For the purposes of this analysis, the main importance in deciding the number of classes was placed on interpretability. The technical details behind the chosen LCA models are presented in Appendix A.

4.2 Gambling types

LCA was conducted separately for men and women, as participation in gambling activities varied greatly by gender. Past year participation in the 19 gambling activities (yes/no binary variables) as well as the number of gambling activities (ranging from 0 to 19) were used in each LCA to classify respondents into mutually exclusive groups.

A seven cluster solution was found to be the optimal for both men and women in terms of relevance and interpretability. Some of the clusters were similar between men and women. However, important differences of gambling types by gender were observed which are discussed below.

Table 4.1 presents the results for women while Table 4.2 shows the resulting classes for men.

4.2.1 Women

Cluster A – Non-gamblers (40%)
This is the largest cluster and consists of non-gamblers. This accounted for 40% of women. All women in this cluster had not engaged in any gambling activity in the past year. (The proportions in the non-gambling group vary slightly from those presented in Chapter 2. This is because the LCA process includes individuals with a high degree of missing data, whereas some of these cases are excluded from analysis of overall gambling prevalence rates in Chapter 2.)[1]

Cluster B – National Lottery Draw only (21%)
This is the second largest cluster and consists of women who only reported playing the National Lottery in the past year. This accounted for 21% of women.

Cluster C – National Lottery Draw & scratchcards only (7%)
This cluster consists of women who not only played the National Lottery but who had also bought scratchcards. Every woman in this group reported both gambling activities in the past year. 7% of women were in this group.

Cluster D – Minimal, no National Lottery Draw (8%)
All women in this cluster reported taking part in a single gambling activity in the past year which was not buying tickets for the National Lottery. About one third of them had played other lotteries and one quarter had bought scratchcards. A smaller proportion (but above average) had reported engaging in other activities, such as playing bingo (14%), betting on horse races (11%) and using slot machines (7%). 8% of women were in this group

Cluster E – Moderate, less varied (8%)
Women in this cluster reported engaging in two or three gambling activities in the past year, which were mainly lotteries and related products. One of the activities was other lotteries (100% reported playing other lotteries in the past year), 90% played the National Lottery, and about one third bought scratchcards. Women in this cluster were average bingo players (6%) and average betters on horse races (8%). This group accounted for around 8% of women.

Cluster F – Moderate, more varied (11%)
Like cluster E, women in this cluster also reported two or three gambling activities in the past year, but the activities covered a much wider range. A slightly smaller percentage had played the National Lottery (77% compared to 90% for women in cluster E) and a similar percentage bought scratchcards (35% compared to 31% in cluster E). Unlike cluster E, no women in this cluster played other lotteries. This cluster included the second highest level of horse races betters (36%), bingo players (30%), slot machines users (14%) and private (9%) and online (8%) betters. 11% of women were in this group.

Cluster G – Multiple (6%)
This cluster consisted of multiple gamblers participating in at least four activities. With the exception of the National Lottery Draw and other lotteries, women in this cluster reported the highest participation on all gambling activities. 6% of women were classified as multiple activity gamblers.

Table 4.1

Gambling types among women

All adults aged 16 and over — *2012*

Gambling activity	Past year gambling type							Total
	A	B	C	D	E	F	G	
	%	%	%	%	%	%	%	%
Number of gambling activities								
0	100	0	0	0	0	0	0	40
1	0	100	0	100	0	0	0	29
2	0	0	100	0	55	59	0	17
3	0	0	0	0	45	41	0	8
4	0	0	0	0	0	0	55	3
5	0	0	0	0	0	0	24	1
6	0	0	0	0	0	0	12	1
7	0	0	0	0	0	0	4	0
8	0	0	0	0	0	0	2	0
9	0	0	0	0	0	0	1	0
10	0	0	0	0	0	0	1	0
11	0	0	0	0	0	0	0	0
12+	0	0	0	0	0	0	0	0
Lotteries and related products								
National Lottery Draw	0	100	100	0	90	77	96	49
Scratchcards	0	0	100	26	31	35	80	20
Other lotteries	0	0	0	34	100	0	59	14
Machines/games								
Football pools	0	0	0	1	1	4	6	1
Bingo (not online)	0	0	0	14	6	30	43	7
Slot machines	0	0	0	7	3	14	37	4
Machines in a bookmakers	0	0	0	0	0	3	12	1
Casino table games (not online)	0	0	0	1	0	4	12	1
Poker played in pubs or clubs	0	0	0	0	0	2	1	0
Online gambling on slots, casino or bingo games	0	0	0	1	1	4	23	2
Betting activities								
Online betting with a bookmaker	0	0	0	0	0	8	19	2
Betting exchange	0	0	0	0	0	1	1	0
Horse races (not online)	0	0	0	11	8	36	46	8
Dog races (not online)	0	0	0	2	0	7	18	2
Sports events (not online)	0	0	0	0	1	4	13	1
Other events (not online)	0	0	0	0	0	1	4	0
Spread-betting	0	0	0	0	0	0	2	0
Private betting	0	0	0	3	3	9	16	2
Other gambling activity								
Any other gambling	0	0	0	1	1	3	3	1
Bases (unweighted)	*2488*	*1550*	*442*	*489*	*577*	*687*	*353*	*6586*
Bases (weighted)	*2380*	*1294*	*408*	*472*	*474*	*638*	*353*	*6019*

4.2.2 Men

Cluster A – Non-gamblers (33%)
This is the largest cluster and consists of non-gamblers, accounting for 33% of men. All men in this cluster had not engaged in any gambling activity in the past year. (As previously, the proportions in the non-gambling group vary slightly from those presented in Chapter 2. This is because the LCA process includes individuals with a high degree of missing data, whereas some of these cases are excluded from analysis of overall prevalence rates in Chapter 2.)

Cluster B – National Lottery Draw only (22%)
This cluster consists of men who only played the National Lottery (about one quarter (22%) of men, a similar proportion to women). This was their only reported gambling activity in the past year.

Cluster C – Minimal, lotteries & scratchcards (20%)
Men in this cluster reported engaging in two or three gambling activities in the past year, which were mainly lotteries and related products. One of the activities was the National Lottery Draw (100% reported playing the National Lottery in the past year), about one half (45%) bought scratchcards and one third (35%) played other lotteries. Men in this cluster were slightly above average betters on horse races (15%), and average slot machine users (9%). Overall, one in five men (20%) were in this group.

Cluster D – Minimal, no National Lottery Draw (9%)
Two thirds (69%) of men in this cluster reported gambling in a single activity in the past year and around one third (31%) took part in two activities; none of which were the National Lottery Draw. About one quarter (24%) had played other lotteries, one fifth (19%, the same as average) had bought scratchcards. A higher than average proportion (17%) were private betters. A smaller proportion (slightly above average) reported other activities, such as betting on horse races (14%), and using slot machines (13%). Overall, 9% of men were in this group.

Cluster E – Moderate (12%)
Men in this cluster reported taking part in three to six gambling activities in the past year, with much higher participation rates compared with the previous clusters (except for the National Lottery Draw with a participation of 84%). Just under half (44%) bought scratchcards or bet on horse races (42%), and over a quarter played other lotteries (28%), used slot machines (32%), bet online (30%), bet on sport events (30%) or were private betters (29%). A smaller proportion (above 10% and much higher than average) had played football pools, casino table games, used machines in bookmakers and bet on dog races. This group accounted for 12% of men.

Cluster F – Multiple (3%)
This cluster consisted of multiple gamblers participating in six to ten activities. With the exception of the National Lottery Draw, men in this cluster reported very high (the second highest) participation on all gambling activities.

Cluster G – Multiple, high (1%)

This is a very small cluster consisting of multiple gamblers with at least 11 gambling activities. With the exception of the National Lottery Draw, men in this cluster reported the highest participation in all gambling activities.

Table 4.2

Gambling types among men

All adults aged 16 and over *2012*

Gambling activity	Past year gambling type							Total
	A	B	C	D	E	F	G	
	%	%	%	%	%	%	%	%
Number of activities								
0	100	0	0	0	0	0	0	33
1	0	100	0	68	0	0	0	28
2	0	0	69	32	0	0	0	17
3	0	0	31	0	24	0	0	9
4	0	0	0	0	41	0	0	5
5	0	0	0	0	22	0	0	3
6	0	0	0	0	13	10	0	2
7	0	0	0	0	0	34	0	1
8	0	0	0	0	0	28	0	1
9	0	0	0	0	0	19	0	1
10	0	0	0	0	0	9	0	0
11	0	0	0	0	0	0	22	0
12	0	0	0	0	0	0	22	0
13	0	0	0	0	0	0	20	0
14	0	0	0	0	0	0	7	0
15	0	0	0	0	0	0	12	0
16	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	4	0
18	0	0	0	0	0	0	5	0
19	0	0	0	0	0	0	8	0
Lotteries and related products								
National Lottery Draw	0	100	100	0	84	79	98	56
Scratchcards	0	0	45	19	44	64	89	19
Other lotteries	0	0	35	24	28	37	56	14
Machines/games								
Football pools	0	0	4	6	11	40	60	5
Bingo (not online)	0	0	5	5	8	17	40	3
Slot machines	0	0	9	13	32	78	80	10
Machines in a bookmakers	0	0	0	2	14	63	97	5
Casino table games (not online)	0	0	2	7	19	38	80	5
Poker played in pubs or clubs	0	0	0	1	8	21	64	2
Online gambling on slots, casino or bingo games	0	0	1	1	12	53	75	4
Betting activities								
Online betting with a bookmaker	0	0	4	8	30	57	88	8
Betting exchange	0	0	0	1	7	14	38	2
Horse races (not online)	0	0	15	14	42	51	87	12
Dog races (not online)	0	0	1	4	15	21	47	4
Sports events (not online)	0	0	3	8	30	71	100	8
Other events (not online)	0	0	0	1	4	20	75	2

Table 4.2 (continued)								
Gambling types among men								
All adults aged 16 and over								*2012*
Gambling activity	**Past year gambling type**							**Total**
	A	B	C	D	E	F	G	
	%	%	%	%	%	%	%	%
Spread-betting	0	0	0	0	2	5	52	1
Private betting	0	0	4	17	29	51	80	8
Other gambling activity								
Any other gambling	0	0	1	4	8	12	51	3
Bases (unweighted)	*1625*	*1261*	*1072*	*421*	*616*	*152*	*41*	*5188*
Bases (weighted)	*1888*	*1248*	*1146*	*504*	*719*	*192*	*59*	*5755*

4.3 Profile of gambling types

This section presents the results of logistic regression modelling to identify factors that are significantly associated with the likelihood of belonging to a particular gambling type, while controlling for other potentially confounding factors. Logistic regression is similar to ordinary regression except that it has a dependent variable with two discrete outcomes.

Using a list of 16 socio-economic and health indicators which are known to be associated with gambling behaviour, stepwise logistic regression was used to ascertain which ones were significantly associated with belonging to each gambling type (separately for men and women). Fourteen models were considered (seven for men and seven for women, one per cluster) and in each one, LCA cluster membership was the binary dependent variable (1: belonging to a particular gambling type, 0: belonging to any of the other types).

The list of independent variables included:

- age group
- marital status
- ethnicity
- religion
- highest educational qualifications
- National Statistics Socio-Economic Classification (NS-SEC)
- economic activity
- tenure
- equivalised household income quintiles
- general health
- cigarette smoking status
- alcohol consumption
- blood pressure status
- Body Mass Index (BMI) group
- General Health Questionnaire (GHQ) score
- Warwick-Edinburgh Mental Wellbeing (WEBWMS) score

The technical details for choosing the final model for each gambling type are shown in Appendix A.

Results are presented in the form of odds ratios. For each variable, these should be interpreted relative to the reference categories, all of which have an odds ratio of 1. An odds ratio of less than 1 indicates lower odds of group membership among individuals in that category compared with the reference category and an odds ratio of greater than 1 indicates increased odds. Finally 95% confidence intervals are presented for each comparison category and where these do not straddle 1.0 for any category then the odds for that category are significantly different to the reference category.

4.4 Women

Tables 4.1a to 4.1g show the resulting regression models for each of the seven gambling types for women (only significant variables are presented).

Non-gamblers
The odds of being a non-gambling woman were higher among those who were 75 and over (compared with those who were 16-24); were widowed as opposed to married, Asian/Asian British (as opposed to White/British), Muslim (opposed to those with no religion), those living in managerial and professional households, those in full-time education or unemployed (compared with those who were employed), and those who either owned their accommodation outright or rented from a council or a housing association (compared with those who owned a home with a mortgage). Female non-gamblers were also more likely to be non-smokers, to not have drunk alcohol in the previous seven days and to have a BMI of less than 25.

Some of these findings are striking. For example, marital status was significantly associated with female non-gambling even after age had been taken into account, with those who were widows being more likely to be non-gamblers (odds were 1.32 times higher for widows). This may, in part, be related to the loss of someone in the immediate social network with whom to gamble. Likewise, both ethnicity and religion were significantly associated with non-gambling when both terms were entered into the model. Previous analysis has highlighted that those from Asian/Asian British backgrounds were less likely to gamble. An explanation for this is religious custom. Yet, even when religion was taken into account, ethnicity remained significantly associated with non-gambling status among women. Odds of being a non-gambler were 1.79 times higher among Asian/Asian British women than those who were White/White British. This suggests other factors may be at work influencing engagement among these groups.

National Lottery Draw only
A much smaller range of variables was associated with membership of the National Lottery Draw only group. Odds of membership were higher among those who were 25 years and over. For example, the odds were over four times higher among those aged 45-74 than those aged 16-24. Odds of being a National Lottery only gambler were lower among those who were Muslim (0.33) or from other religious groups (0.59). Finally, the odds of being a National Lottery only gambler were lower among those who rented their accommodation or who owned their property outright.

National Lottery Draw & scratchcards only

Women who only played the National Lottery and bought scratchcards were more likely than other women to be younger (16-34 years old). The odds of being in this group were lower among those 35 and over and typically decreased with advancing age. The odds were also 0.05 times lower among Muslim women than those with no religion and 0.21 times lower among those in full-time education than those who were employed. The odds were 1.91 times higher among those whose highest level of educational attainment was GSCE or equivalent. Finally, the GHQ-12 score (a measure of mental ill health) was associated with membership of this group but the odds only varied significantly from those with a score of 0 for those where their GHQ-12 score was unknown.

Minimal – no National Lottery Draw

Interestingly, being a minimal interest, non-lottery gambler was associated with both smoking and alcohol consumption status. Odds of membership were over two times higher among those with greater daily consumption of cigarettes and were around 1.5 times higher among those who drank up to 12 units of alcohol on their heaviest drinking day (compared with women who did not drink alcohol in the previous week). Age was also associated with membership, with those who were aged 25 and over tending to have lower odds of membership than those aged 16-24.

Moderate – less varied

Only age and BMI status were significantly associated with membership of this group. Women who were 35 years or older and women with a BMI of more than 25 (indicating overweight and/or obesity) had higher odds of being in this group.

Moderate – more varied

Age, ethnicity, alcohol consumption and BMI status were all associated with membership of this group. Women who were 55 or over were less likely to be a member of this group; odds were around 0.3-0.6 times lower than those aged 16-24. Those who drank alcohol in the past seven days had higher odds of being in this group and the odds increased as the amount of alcohol consumed on the heaviest drinking day increased. Women with a BMI of 30 or more (indicating obesity) had odds of being a moderate and varied gambler 1.48 times higher than those who were of normal weight. Finally, although ethnicity overall was associated with membership, the odds of membership for each ethnic group did not vary significantly from those who were White/White British.

Multiple gamblers

A greater range of factors was associated with membership of the multiple interest group. Women who were older were less likely than other women to be multiple interest gamblers. From age 45, the odds of membership were at least 0.23 times lower than those age 16-24. Those in full-time education also had lower odds (0.20) of being a multiple interest gambler. This is interesting as it is clear that the age profile of this group is younger, yet it appears that this group is less likely to be in full-time education and more likely to be employed. Those who drank alcohol in the previous seven days and consumed more units of alcohol on their heaviest drinking day tended to have higher odds of being a member of this group. Those currently with high blood pressure and those with a BMI score of 30 or more (indicating obesity) were also more likely to be multiple interest gamblers. Finally, income and smoking status were associated with membership of this group but the odds for individual categories did not vary relative to the reference group.

Summary

As Table 4.1a to 4.1g show, age was the most common factor associated with membership of each group. Those who were non-gamblers were more likely to be older. However, this did not mean that all gambling groups were likely to be younger – the pattern varied. National Lottery only players and moderate, less varied gamblers were more likely to be older whereas other gambling groups were more likely to be younger.

After age, alcohol consumption and BMI status were the next most prominent predictors of membership. Non-gamblers were more likely to consume less alcohol and were less likely to have a BMI status indicating that they were obese (30 or more). As with age, the pattern by alcohol varied between gambling groups. Those consuming greater amounts of alcohol had lower odds of membership of being a National Lottery Draw only gambler but had higher odds for other groups (except moderate, less varied and minimal, no National Lottery Draw gamblers which were not associated with alcohol consumption). For BMI, the pattern was more consistent, with the odds of being a moderate less varied, moderate more varied, and multiple interest gambler being higher among those with a BMI status of over 30.

Finally, women who were classified as multiple interest gamblers were particularly interesting. A broad range of factors, ranging from individual characteristics (e.g., age) to household level factors (e.g.., income) were associated with membership. However, a range of health and lifestyle factors were also associated with being a multiple interest gambler. They were more likely to smoke, to drink more heavily, to have high blood pressure but be medicated and to have a raised BMI status. This suggests this group may experience poorer health status overall.

Table 4.1a

Estimated odds ratios for belonging to cluster A (non-gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p=0.004)				
16-24	1			*622*
25-34	0.85	0.63	1.14	*920*
35-44	1.12	0.83	1.52	*1147*
45-54	1.26	0.93	1.69	*1202*
55-64	1.15	0.81	1.63	*1054*
65-74	1.40	0.94	2.08	*931*
75+	1.91	1.23	2.99	*710*
Marital status (p=0.048)				
Married/living as married	1			*4003*
Single, never married	1.17	0.95	1.45	*1159*
Separated/divorced	1.22	0.98	1.52	*727*
Widowed	1.32	1.02	1.71	*697*
Ethnic group (p=0.025)				
White/White British	1			*6101*
Black/Black British	1.59	0.94	2.67	*131*
Asian/Asian British	1.79	1.12	2.84	*262*
Mixed/Other	1.34	0.77	2.32	*92*
Religion (p<0.001)				
No religion	1			*1917*
Christian – Catholic	0.69	0.56	0.84	*1196*
Christian – other denominations	0.87	0.74	1.02	*3118*
Muslim	4.42	2.18	8.98	*141*
Any other religion	1.23	0.84	1.80	*214*
NS-SEC (p=0.004)				
Managerial & professional	1			*2581*
Intermediate	0.77	0.65	0.92	*1468*
Routine & manual	0.77	0.65	0.91	*2361*
Unknown	1.10	0.67	1.83	*176*
Economic activity (p<0.001)				
In employment, self-employed or government training	1			*3263*
In full-time education	2.35	1.49	3.70	*255*
Retired	1.08	0.83	1.39	*1817*
Unemployed	1.77	1.24	2.52	*282*
Other inactive	1.57	1.28	1.94	*969*
Tenure (p=0.001)				
Buying with a mortgage/loan	1			*2148*
Own outright	1.25	1.02	1.52	*2262*
Rent from private landlord	1.05	0.84	1.31	*1163*
Rent from council / housing association	1.55	1.25	1.92	*895*
Other	1.13	0.63	2.04	*118*
Cigarette smoking status (p<0.001)				
Light smokers, under 10 a day	1			*435*
Moderate smokers, 10 to under 20 a day	0.79	0.55	1.14	*574*
Heavy smokers, 20 or more a day	0.90	0.54	1.50	*246*
Non-smoker	1.52	1.13	2.04	*5331*

Table 4.1a (continued)

Estimated odds ratios for belonging to cluster A (non-gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*3092*
Drank less than 4 units	0.77	0.65	0.91	*1583*
Drank 4 or more but less than 8	0.65	0.54	0.80	*1147*
Drank 8 or more but less than 12	0.38	0.27	0.53	*460*
Drank 12 or more but less than 16	0.42	0.27	0.65	*187*
Drank 16 or more units on heaviest drinking day	0.48	0.29	0.79	*117*
BMI group (p<0.001)				
Less than 25	1			*2230*
25 to less than 30	0.80	0.68	0.94	*1853*
30 and over	0.59	0.50	0.71	*1539*
Unknown	0.75	0.61	0.93	*964*

[a] Confidence interval.

Table 4.1b

Estimated odds ratios for belonging to cluster B (National Lottery Draw only)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*622*
25-34	3.05	2.09	4.45	*920*
35-44	3.23	2.24	4.65	*1147*
45-54	4.13	2.85	5.99	*1202*
55-64	4.89	3.32	7.21	*1054*
65-74	4.46	2.99	6.66	*931*
75+	3.34	2.17	5.14	*710*
Religion (p=0.001)				
No religion	1			*1917*
Christian – Catholic	1.08	0.86	1.34	*1196*
Christian – other denominations	0.89	0.74	1.07	*3118*
Muslim	0.33	0.16	0.69	*141*
Any other religion	0.59	0.37	0.94	*214*
Tenure (p<0.001)				
Buying with a mortgage/loan	1			*2148*
Own outright	0.76	0.63	0.93	*2262*
Rent from private landlord	0.81	0.65	1.00	*1163*
Rent from council / housing association	0.58	0.45	0.75	*895*
Other	1.11	0.60	2.05	*118*

[a] Confidence interval.

Table 4.1c

Estimated odds ratios for belonging to cluster C (National Lottery Draw and scratchcards only)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p=0.002)				
16-24	1			*622*
25-34	0.91	0.56	1.48	*920*
35-44	0.72	0.45	1.15	*1147*
45-54	0.59	0.38	0.90	*1202*
55-64	0.39	0.23	0.69	*1054*
65-74	0.39	0.19	0.77	*931*
75+	0.25	0.09	0.67	*710*
Religion (p=0.030)				
No religion	1			*1917*
Christian – Catholic	1.20	0.86	1.69	*1196*
Christian – other denominations	1.03	0.74	1.42	*3118*
Muslim	0.05	0.01	0.36	*141*
Any other religion	0.80	0.40	1.59	*214*
Highest educational qualification (p=0.001)				
Degree or higher (or equivalent)	1			*1729*
Higher education below degree level	1.56	0.99	2.47	*657*
A-level or equivalent	1.41	0.95	2.10	*1019*
GCSEs or equivalent	1.91	1.35	2.71	*1620*
Other/none	2.24	1.50	3.34	*1561*
Economic activity (p=0.009)				
In employment, self emp or govt training	1			*3263*
In full-time education	0.21	0.08	0.55	*255*
Retired	0.63	0.35	1.13	*1817*
Unemployed	0.69	0.37	1.28	*282*
Other inactive	0.73	0.51	1.03	*969*
GHQ-12 score (p=0.048)				
Score 0	1			*3726*
Score 1-3	0.80	0.59	1.07	*1571*
Score 4+	0.73	0.51	1.05	*1104*
Unknown	0.23	0.06	0.87	*185*

[a] Confidence interval.

Table 4.1d

Estimated odds ratios for belonging to cluster D (minimal - no National Lottery Draw)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p=0.005)				
16-24	1			*622*
25-34	0.55	0.35	0.85	*920*
35-44	0.51	0.34	0.77	*1147*
45-54	0.46	0.31	0.70	*1202*
55-64	0.57	0.37	0.87	*1054*
65-74	0.69	0.45	1.07	*931*
75+	0.82	0.55	1.23	*710*
Cigarette smoking status (p=0.021)				
Light smokers, under 10 a day	1			*435*
Moderate smokers, 10 to under 20 a day	2.14	1.14	4.02	*574*
Heavy smokers, 20 or more a day	2.62	1.23	5.55	*246*
Non-smoker	1.48	0.86	2.53	*5331*
Alcohol consumption (p=0.024)				
Did not drink in previous 7 days	1			*3092*
Drank less than 4 units	1.33	1.01	1.75	*1583*
Drank 4 or more but less than 8	1.47	1.05	2.07	*1147*
Drank 8 or more but less than 12	1.95	1.25	3.03	*460*
Drank 12 or more but less than 16	0.72	0.30	1.71	*187*
Drank 16 or more units on heaviest drinking day	1.34	0.59	3.02	*117*

[a] Confidence interval.

Table 4.1e

Estimated odds ratios for belonging to cluster E (moderate - less varied)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p=0.001)				
16-24	1			*622*
25-34	1.07	0.64	1.78	*920*
35-44	2.08	1.25	3.47	*1147*
45-54	2.27	1.36	3.79	*1202*
55-64	2.55	1.55	4.17	*1054*
65-74	2.26	1.33	3.85	*931*
75+	1.94	1.10	3.44	*710*
BMI group (p=0.035)				
Less than 25	1			*2230*
25 to less than 30	1.47	1.10	1.97	*1853*
30 and over	1.45	1.09	1.94	*1539*
Unknown	1.40	0.98	2.00	*964*

[a] Confidence interval.

Table 4.1f

Estimated odds ratios for belonging to cluster F (moderate – more varied)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*622*
25-34	1.02	0.69	1.49	*920*
35-44	0.78	0.53	1.15	*1147*
45-54	0.74	0.49	1.13	*1202*
55-64	0.58	0.38	0.89	*1054*
65-74	0.61	0.40	0.92	*931*
75+	0.38	0.23	0.65	*710*
Ethnic group (p=0.040)				
White/White British	1			*6101*
Black/Black British	0.47	0.21	1.05	*131*
Asian/Asian British	0.53	0.25	1.09	*262*
Mixed/Other	0.50	0.19	1.31	*92*
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*3092*
Drank less than 4 units	1.54	1.19	2.00	*1583*
Drank 4 or more but less than 8	1.79	1.34	2.37	*1147*
Drank 8 or more but less than 12	2.00	1.36	2.92	*460*
Drank 12 or more but less than 16	2.58	1.59	4.19	*187*
Drank 16 or more units on heaviest drinking day	4.24	2.42	7.45	*117*
BMI group (p=0.006)				
Less than 25	1			*2230*
25 to less than 30	1.02	0.80	1.31	*1853*
30 and over	1.48	1.16	1.89	*1539*
Unknown	1.08	0.80	1.46	*964*

[a] Confidence interval.

Table 4.1g

Estimated odds ratios for belonging to cluster G (multiple gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*622*
25-34	1.02	0.64	1.61	*920*
35-44	0.52	0.32	0.84	*1147*
45-54	0.23	0.14	0.40	*1202*
55-64	0.23	0.12	0.43	*1054*
65-74	0.09	0.03	0.25	*931*
75+	0.05	0.02	0.19	*710*
Economic activity (p=0.017)				
In employment, self-employed or government training	1			*3263*
In full-time education	0.20	0.07	0.53	*255*
Retired	1.41	0.70	2.82	*1817*
unemployed	0.92	0.53	1.60	*282*
Other inactive	0.81	0.53	1.22	*969*
Equivalised income quintiles (p=0.046)				
Highest household income quintile	1			*1066*
2nd quintile	1.06	0.67	1.66	*1029*
3rd quintile	1.67	1.07	2.63	*1086*
4th quintile	1.24	0.75	2.06	*1190*
Lowest household income quintile	0.88	0.52	1.51	*1146*
Unknown	0.92	0.55	1.53	*1069*
Cigarette smoking status (p=0.007)				
Light smokers, under 10 a day	1			*435*
Moderate smokers, 10 to under 20 a day	1.08	0.59	1.97	*574*
Heavy smokers, 20 or more a day	1.78	0.87	3.61	*246*
Non-smoker	0.72	0.46	1.14	*5331*
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*3092*
Drank less than 4 units	1.70	1.18	2.46	*1583*
Drank 4 or more but less than 8	1.72	1.13	2.63	*1147*
Drank 8 or more but less than 12	3.25	2.12	5.00	*460*
Drank 12 or more but less than 16	2.43	1.29	4.56	*187*
Drank 16 or more units on heaviest drinking day	1.90	0.89	4.02	*117*
Blood pressure status (p=0.023)				
Has had high blood pressure - does not current take medication	1			*626*
Has high blood pressure - takes medication	1.99	1.10	3.58	*1203*
Have never had high blood pressure	1.02	0.67	1.58	*4757*
BMI group (p=0.007)				
Less than 25	1			*2230*
25 to less than 30	1.16	0.81	1.65	*1853*
30 and over	1.93	1.32	2.81	*1539*
Unknown	1.25	0.78	1.98	*964*

[a] Confidence interval.

4.5 Men

Tables 4.2a to 4.2g show the resulting regression models for each of the seven gambling types for men (only significant variables are presented).

Non-gamblers
As with women, the odds of being a non-gambling man were higher among those aged 75 and over (2.25), higher among those from Asian/Asian British backgrounds (2.08) and higher among those who were Muslim (1.89). Odds were also higher among those in full-time education (2.84) relative to those who were employed, and were 1.54 times higher among those who rented their accommodation from a local authority or housing association. The odds of being a male non-gambler were lower among those whose highest educational qualification was below degree level. Odds were also lower among those who consumed alcohol and who drank greater amounts of alcohol on their heaviest drinking day. The odds of being a male non-gambler were lower among those with higher BMI scores, meaning that those who were overweight or obese were less likely to be a non-gambler. Finally, income was associated with membership of this group, but the odds varied without significant pattern.

National Lottery Draw only
Men who only play the National Lottery were more likely to be older, with the odds (generally) increasing as age increased. The odds were lower among those who drank the highest levels of alcohol on their heaviest drinking day. For example, they were 0.53 times lower among men who consumed 16 or more units on their heaviest drinking day compared with those who did not drink. Odds were also 0.71 times lower among those with a GHQ-12 score of 4 or more (indicating probably psychological ill-health) than those with a GHQ-12 score of 0. Whilst educational attainment was associated with National Lottery only gambling, the only group that varied from the reference category of those educated to a degree level or higher was those who had higher levels of educational qualifications below degree level (odds of membership were 1.56 times among this group).

Minimal – National Lottery Draw & scratchcards
This was one of two groups where age did not predict membership. Instead, odds of membership were lower among men who were single (0.59) than those who were married; lower among Muslim men (0.28) than those with no religion; and lower among those who were either retired (0.72) or in full-time education (0.35) than those who were employed. Odds of membership were higher among men living in routine and manual households (1.52) than managerial and professional households, and higher among those who both consumed alcohol and drank more alcohol on their heaviest drinking day (odds were around 1.5 times higher among those consumed alcohol than those who did not).

Minimal – no National Lottery Draw
Similarly to the minimal interest, lottery and scratchcard group, age was not associated with membership of this group. However, marital status, educational qualifications and economic activity were. The odds of being in this group were higher among those who were single (1.89) than those who were married, and higher among those in full-time education (2.25) or retired (1.75) than

those who were employed. The odds were lower among men whose highest educational qualification was GCSE or equivalent (0.64) or among those with other/no qualifications (0.64) than those educated to degree level.

Moderate

A number of factors were associated with membership of the moderate group. These were age, educational qualifications, equivalised income, smoking and alcohol consumption and self-reported blood pressure status.

Those aged 55 and over were less likely to be moderate interest gamblers, the odds being at least 0.42 times lower among those aged 55 and over than those aged 16-24. The odds were also lower among those living in the lowest income households (0.39) than those living in the highest income households. The odds were generally higher among those with lower levels of academic achievement and were around two times higher among those with greater levels of daily cigarette consumption. Odds of being a moderate interest gambler increased as alcohol consumption on the heaviest drinking day increased, being highest (2.69) among men who drank 16 or more units of alcohol on their heaviest drinking day. Odds were also higher among those who had never had high blood pressure (1.60) than among men who reported that they had ever had high blood pressure.

Multiple gamblers

Membership of this group was highly associated with age. From the age of 35, the odds of being a multiple interest gambler decreased as age increased and were 0.01 times lower among those aged 75 and over than those aged 16-24. Consuming the highest levels of alcohol on the heaviest drinking day was associated with membership of this group, the odds being 2.73 times higher among those drinking the most alcohol compared with those who did not drink at all in the previous week. Catholics were also more likely to be male multiple interest gamblers; the odds were 2.99 times higher among Catholics than those with no religion. Finally, household income was associated with membership of this group but none of the individual income groups varied from the reference category.

Multiple gamblers – high

The total number of men categorised as very high multiple interest gamblers was low; there were only 41 men in this group. This means the following results need to be interpreted with caution. Age, marital status, economic activity, alcohol consumption, and GHQ-12 score were all associated with membership of this group. Odds were lower among those who were older, and lower among those who were separated or divorced. The odds were higher among those who were retired, though the confidence intervals were large and therefore should be treated with caution. The odds were also higher among men who consumed the greatest amount of alcohol on their heaviest drinking day (6.51) and were 5.64 times higher among those with a GHQ-12 score of 4 or more (indicating probable psychological ill-health) and those with a score of 0.

Summary

Among men, consumption of alcohol was the most prominent predictor of each gambling group, being significantly associated with six out of the seven groups. The odds of being both a non-gambler and a National Lottery only gambler were lower among those who tended to consume more alcohol and odds of being a member of all other gambling groups (with the exception of minimal, not National Lottery Draw gamblers) were higher among those who tended to consume

greater amounts of alcohol. This pattern was particularly stark for both multiple interest gambling groups. After alcohol consumption, age was the next factor most consistently associated with membership of each group (being associated with five of the seven groups). Again, the pattern between non-gamblers and National Lottery only gamblers was similar, with those who were older being more likely to be a member of this group. This was particularly pronounced for National Lottery only gamblers. For other groups where age was associated with membership, the odds tended to be lower among older age groups.

A number of socio-economic factors were associated with membership of various groups, for example the odds of being a non-gambler and a minimal, not National Lottery Draw gambler were higher among those in full-time education than those in paid employment. Income predicted membership of both the moderate interest and multiple interest gambling groups, with the odds of being a moderate interest gambler being lower among those from the lowest income households.

As with women, religion was associated with membership of some groups. The pattern was fairly consistent. Non-gamblers were more likely to be Muslim and less likely to be Catholic compared with those with no religion. For multiple interest gamblers and minimal interest gamblers, the reverse was true. This was particularly prominent for multiple interest gamblers where the odds were 2.99 times higher among Catholics than those with no religion.

Finally, GHQ-12 score was significantly associated with membership of some gambling groups. This is a measure of mental ill health and notably was not associated with membership of any of the female gambling groups. The findings were especially pronounced for multiple interest - with the odds of membership being over five times higher among those with a GHQ-12 score indicating probably psychological ill health.

Taken together with the results for women, this analysis shows that whilst a range of individual and household level factors were associated with both male and female gambling types. However, the specific factors vary between men and women. For women, factors like BMI status were more prominent, whereas for men there were some associations with psychological ill health. However, for both men and women, age, alcohol status and religious status (among others) were common factors predicting membership of gambling groups.

Table 4.2a

Estimated odds ratios for belonging to cluster A (non-gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*481*
25-34	0.69	0.46	1.03	*612*
35-44	0.74	0.52	1.06	*868*
45-54	1.03	0.72	1.48	*937*
55-64	1.13	0.77	1.65	*896*
65-74	1.36	0.85	2.18	*895*
75+	2.25	1.33	3.80	*499*
Ethnic group (p=0.035)				
White/White British	1			*4834*
Black/Black British	1.00	0.55	1.79	*63*
Asian/Asian British	2.08	1.26	3.43	*231*
Mixed/Other	1.27	0.68	2.36	*60*
Religion (p<0.001)				
No religion	1			*1912*
Christian – Catholic	0.67	0.52	0.86	*815*
Christian – other denominations	0.90	0.75	1.07	*2189*
Muslim	1.89	1.00	3.58	*127*
Any other religion	0.62	0.35	1.08	*145*
Highest educational qualification (p<0.001)				
Degree or higher (or equivalent)	1			*1370*
Higher education below degree level	0.61	0.46	0.80	*656*
A-level or equivalent	0.52	0.40	0.67	*792*
GCSEs or equivalent	0.61	0.48	0.77	*1272*
Other/none	0.53	0.40	0.69	*1098*
Economic activity (p<0.001)				
In employment, self-employed or government training	1			*2934*
In full-time education	2.84	1.78	4.56	*212*
Retired	0.92	0.67	1.28	*1383*
unemployed	1.34	0.95	1.91	*285*
Other inactive	1.69	1.20	2.38	*374*
Tenure (p=0.005)				
Buying with a mortgage/loan	1			*1775*
Own outright	1.28	1.04	1.56	*1808*
Rent from private landlord	1.02	0.79	1.32	*817*
Rent from council / housing association	1.54	1.17	2.02	*687*
Other	0.86	0.45	1.63	*101*
Equivalised income quintiles (p=0.033)				
Highest household income quintile	1			*965*
2nd quintile	1.02	0.78	1.33	*932*
3rd quintile	0.88	0.66	1.17	*891*
4th quintile	1.37	1.02	1.84	*838*
Lowest household income quintile	1.24	0.91	1.68	*787*
Unknown	1.02	0.76	1.39	*775*

Table 4.2a (continued)

Estimated odds ratios for belonging to cluster A (non-gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*1685*
Drank less than 4 units	0.77	0.62	0.96	*1137*
Drank 4 or more but less than 8	0.65	0.51	0.82	*1024*
Drank 8 or more but less than 12	0.55	0.41	0.74	*620*
Drank 12 or more but less than 16	0.51	0.36	0.74	*345*
Drank 16 or more units on heaviest drinking day	0.35	0.23	0.54	*377*
BMI group (p=0.028)				
Less than 25	1			*1318*
25 to less than 30	0.79	0.65	0.94	*2063*
30 and over	0.73	0.58	0.93	*1297*
Unknown	0.89	0.66	1.19	*510*

[a] Confidence interval.

Table 4.2b

Estimated odds ratios for belonging to cluster B (National Lottery Draw only)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*481*
25-34	3.29	1.81	5.95	*612*
35-44	6.15	3.60	10.51	*868*
45-54	8.60	5.13	14.41	*937*
55-64	9.32	5.47	15.89	*896*
65-74	8.39	4.88	14.41	*895*
75+	4.77	2.71	8.40	*499*
Highest educational qualification (p=0.022)				
Degree or higher (or equivalent)	1			*1370*
Higher education below degree level	1.56	1.19	2.06	*656*
A-level or equivalent	1.17	0.87	1.57	*792*
GCSEs or equivalent	1.08	0.85	1.37	*1272*
Other/none	1.22	0.95	1.56	*1098*
Alcohol consumption (p=0.014)				
Did not drink in previous 7 days	1			*1685*
Drank less than 4 units	0.98	0.78	1.21	*1137*
Drank 4 or more but less than 8	0.83	0.65	1.06	*1024*
Drank 8 or more but less than 12	0.82	0.61	1.11	*620*
Drank 12 or more but less than 16	0.67	0.46	0.97	*345*
Drank 16 or more units on heaviest drinking day	0.53	0.35	0.81	*377*
GHQ-12 score (p=0.008)				
Score 0	1			*3386*
Score 1-3	1.17	0.97	1.42	*1066*
Score 4+	0.71	0.54	0.94	*613*
Unknown	1.26	0.79	2.02	*123*

[a] Confidence interval.

Table 4.2c

Estimated odds ratios for belonging to cluster C (minimal – lotteries & scratchcards)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Marital status (p=0.001)				
Married/living as married	1			*3485*
Single, never married	0.59	0.45	0.77	*1066*
Separated/divorced	0.74	0.54	1.00	*421*
Widowed	0.89	0.56	1.39	*216*
Religion (p=0.007)				
No religion	1			*1912*
Christian – Catholic	1.31	1.02	1.68	*815*
Christian – other denominations	1.11	0.92	1.35	*2189*
Muslim	0.28	0.11	0.68	*127*
Any other religion	1.25	0.76	2.08	*145*
NS-SEC (p=0.001)				
Managerial & professional	1			*2176*
Intermediate	1.18	0.94	1.48	*1044*
Routine & manual	1.52	1.24	1.86	*1870*
Unknown	0.80	0.33	1.91	*98*
Economic activity (p=0.002)				
In employment, self-employed or government training	1			*2934*
In full-time education	0.35	0.17	0.70	*212*
Retired	0.72	0.58	0.89	*1383*
Unemployed	0.71	0.46	1.09	*285*
Other inactive	0.95	0.66	1.36	*374*
Alcohol consumption (p=0.009)				
Did not drink in previous 7 days	1			*1685*
Drank less than 4 units	1.49	1.17	1.91	*1137*
Drank 4 or more but less than 8	1.44	1.10	1.87	*1024*
Drank 8 or more but less than 12	1.54	1.12	2.12	*620*
Drank 12 or more but less than 16	1.54	1.11	2.14	*345*
Drank 16 or more units on heaviest drinking day	1.57	1.11	2.22	*377*
GHQ-12 score (p=0.045)				
Score 0	1			*3386*
Score 1-3	0.73	0.59	0.92	*1066*
Score 4+	1.01	0.75	1.35	*613*
Unknown	0.79	0.44	1.43	*123*

[a] Confidence interval.

Table 4.2d

Estimated odds ratios for belonging to cluster D (minimal – no National Lottery Draw)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Marital status (p=0.002)				
Married/living as married	1			*3485*
Single, never married	1.89	1.36	2.63	*1066*
Separated/divorced	1.24	0.75	2.05	*421*
Widowed	1.48	0.83	2.64	*216*
Highest educational qualification (p=0.001)				
Degree or higher (or equivalent)	1			*1370*
Higher education below degree level	0.65	0.43	0.99	*656*
A-level or equivalent	1.28	0.88	1.85	*792*
GCSEs or equivalent	0.64	0.43	0.95	*1272*
Other/none	0.64	0.43	0.94	*1098*
Economic activity (p=0.001)				
In employment, self-employed or government training	1			*2934*
In full-time education	2.25	1.36	3.73	*212*
Retired	1.75	1.26	2.43	*1383*
Unemployed	1.44	0.87	2.36	*285*
Other inactive	1.12	0.68	1.84	*374*

[a] Confidence interval.

Table 4.2e

Estimated odds ratios for belonging to cluster E (moderate)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*481*
25-34	1.43	0.94	2.16	*612*
35-44	1.10	0.73	1.65	*868*
45-54	0.69	0.45	1.05	*937*
55-64	0.42	0.27	0.66	*896*
65-74	0.42	0.25	0.69	*895*
75+	0.26	0.13	0.50	*499*
Highest educational qualification (p=0.011)				
Degree or higher (or equivalent)	1			*1370*
Higher education below degree level	1.44	0.99	2.08	*656*
A-level or equivalent	1.43	1.01	2.03	*792*
GCSEs or equivalent	1.64	1.21	2.24	*1272*
Other/none	1.77	1.24	2.54	*1098*
Equivalised income quintiles (p=0.003)				
Highest household income quintile	1			*965*
2nd quintile	0.74	0.53	1.02	*932*
3rd quintile	0.69	0.48	1.00	*891*
4th quintile	0.70	0.48	1.05	*838*
Lowest household income quintile	0.39	0.25	0.60	*787*
Unknown	0.65	0.44	0.97	*775*
Cigarette smoking status (p=0.032)				
Light smokers, under 10 a day	1			*307*
Moderate smokers, 10 to under 20 a day	2.00	1.16	3.47	*456*
Heavy smokers, 20 or more a day	2.07	1.13	3.78	*331*
Non-smoker	1.48	0.93	2.35	*4094*
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*1685*
Drank less than 4 units	1.35	0.94	1.96	*1137*
Drank 4 or more but less than 8	1.59	1.13	2.25	*1024*
Drank 8 or more but less than 12	1.88	1.31	2.70	*620*
Drank 12 or more but less than 16	2.55	1.69	3.85	*345*
Drank 16 or more units on heaviest drinking day	2.69	1.80	4.03	*377*
Blood pressure status (p=0.036)				
Has had high blood pressure - does not current take medication	1			*344*
Has high blood pressure - takes medication	1.09	0.63	1.91	*1027*
Have never had high blood pressure	1.60	1.00	2.58	*3817*

[a] Confidence interval.

Table 4.2f

Estimated odds ratios for belonging to cluster F (multiple gamblers)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*463*
25-34	0.85	0.48	1.51	*579*
35-44	0.27	0.15	0.52	*827*
45-54	0.06	0.02	0.16	*926*
55-64	0.12	0.05	0.28	*882*
65-74	0.06	0.02	0.19	*890*
75+	0.01	0.00	0.07	*494*
Religion (p=0.001)				
No religion	1			*1912*
Christian – Catholic	2.99	1.70	5.27	*815*
Christian – other denominations	1.50	0.85	2.64	*2189*
Muslim*	-	-	-	-
Any other religion	0.39	0.08	1.86	*145*
Equivalised income quintiles (p=0.016)				
Highest household income quintile	1			*956*
2nd quintile	1.18	0.62	2.23	*923*
3rd quintile	1.61	0.80	3.27	*884*
4th quintile	0.40	0.15	1.05	*827*
Lowest household income quintile	0.56	0.22	1.43	*743*
Unknown	1.59	0.80	3.18	*728*
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*1566*
Drank less than 4 units	0.45	0.20	0.99	*1130*
Drank 4 or more but less than 8	1.96	0.96	4.00	*1024*
Drank 8 or more but less than 12	2.74	1.39	5.42	*619*
Drank 12 or more but less than 16	1.86	0.78	4.44	*345*
Drank 16 or more units on heaviest drinking day	2.73	1.36	5.45	*377*

* There are no Muslim men (127 cases) belonging to this cluster. As a result, these 127 cases were excluded from analysis.

[a] Confidence interval.

Table 4.2g

Estimated odds ratios for belonging to cluster G (multiple gamblers – high)

All aged 16 and over *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Age group (p<0.001)				
16-24	1			*452*
25-34	0.76	0.24	2.39	*576*
35-44	0.17	0.04	0.73	*776*
45-54	0.08	0.02	0.41	*810*
55-64	0.01	0.00	0.09	*727*
65-74*	-	-	-	-
75+*	-	-	-	-
Marital status (p=0.048)				
Married/living as married	1			*2279*
Single, never married	1.50	0.59	3.85	*832*
Separated/divorced	0.08	0.01	0.80	*230*
Widowed*	-	-	-	-
Economic activity (p=0.006)				
In employment, self-employment or government training	1			*2702*
In full-time education	0.16	0.02	1.17	*204*
Retired	14.88	1.43	155.03	*159*
Unemployed	0.27	0.07	1.04	*276*
Other inactive*	-	-	-	-
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*959*
Drank less than 4 units	0.15	0.03	0.93	*641*
Drank 4 or more but less than 8	0.08	0.01	0.44	*676*
Drank 8 or more but less than 12	1.95	0.54	7.02	*457*
Drank 12 or more but less than 16	3.97	1.15	13.74	*284*
Drank 16 or more units on heaviest drinking day	6.51	2.37	17.86	*324*
GHQ-12 score (p=0.006)				
Score 0	1			*2295*
Score 1-3	1.73	0.75	3.99	*726*
Score 4+	5.64	1.93	16.48	*320*
Unknown*	-	-	-	-

* There are no men aged 65-74 (895 cases), aged 75+ (499), widowed (32), with 'other inactive' economic activity (356) and unknown GHQ-12 score (65) belonging to this cluster. As a result, these 1,847 cases were excluded from analysis.

[a] Confidence interval.

Notes and references

[1] To develop the LCA groups, all 19 individual activities variables were entered individually into the model. Missing values were included in the modelling process so that if someone only reported taking part in one activity but did not report their other gambling behaviour they were still included in the models. However, the calculation of past year gambling rates are only based on those for whom we have valid answers across the range of activity variables as it has been standard procedure to treat data this way across the BGPS series. This means there is a slight discrepancy in how missing values are treated between chapters, leading to slightly different estimates of non-gambling status between Chapters 2, 3 and 4.

5 Prevalence and profile of at-risk gamblers

5.1 Introduction

The expression 'behaviour' is not simply a question of whether the behaviour is exhibited or not, but rather the extent to which the behaviour is exhibited. This is true of most, if not all, health-related behaviours and in all instances it is important to consider the range and extent of behaviour, rather than just identifying its presence or absence. An example of this would be problem drinking, where categorising people as 'problem' or 'non-problem' drinkers would miss important distinctions between those with varying levels of consumption. In some cases patterns of consumption may not meet the threshold for 'problem drinking' but could still have important implications for both the individual and those around them, particularly if coupled with other behaviours or underlying circumstances. In recent years there has been an increasing recognition that gambling, and particularly problem gambling, needs to be considered in the same way. Those who experience some gambling-related problems but remain below the threshold for 'problem' gambling may still experience a range of negative outcomes and may be at risk of developing problems in the future. Furthermore, from a population health perspective, this group is important; this is because the contribution at-risk gamblers make to overall levels of harm across the whole population is likely to be higher than that of problem gamblers, due to their greater absolute number.

The Problem Gambling Severity Index (PGSI)[1] was developed with the express aim of identifying those who may be 'at-risk' gamblers as well as those who could be classified as 'problem' gamblers. Responses to nine PGSI items are summed to give a score of between zero and 27 and the following thresholds are then applied:

PGSI Score	Category
0	Non-problem gambler
1-2	Low risk gambler
3-7	Moderate risk gambler
8 or over	Problem gambler

The low and moderate risk gamblers identified in this scale represent those who fall below the threshold for problem gambling but do identify with one or more of the PGSI items. This suggests that they could be considered 'at-risk' of experiencing negative consequences from gambling. It is these at-risk groups which are the focus of this chapter with both the prevalence and characteristics of these at-risk gamblers living in England and Scotland being explored.

The PGSI thresholds are recognised standards. They have been used in a number of international prevalence surveys[2] and were the measures used in the last British Gambling Prevalence Survey (BGPS) report in 2010.[3]

5.2 Prevalence of at-risk gambling

This section presents the prevalence of at-risk gambling among those living in England and Scotland.

Overall, 3.2% of adults were classed as low risk gamblers (PGSI score of 1-2) and a further 1.0% were classed as moderate risk gamblers (PGSI score of 3-7). Therefore, 4.2% of adults had a PGSI score that categorised them as an at-risk gambler (PGSI score of 1-7).

Applying these estimates to population data suggests that there were around 1,512,000 low risk and 494,300 moderate risk gamblers in England and Scotland in 2012. This is in addition to the c.180,200 PGSI problem gamblers identified in Chapter 6[4] and demonstrates the importance of considering at-risk as well as problem gamblers given their far higher number.

As shown in Table 5.1, the prevalence rates of at-risk gambling varied for men and women and varied by age. When comparing men and women, rates of both low and moderate risk gambling were significantly higher among men (4.8% and 1.7%) than women (3.2% and 1.0% respectively).

For age, the highest rates of low and moderate risk gambling were observed among younger adults aged 16-24 (7.3% and 2.3% respectively) and typically declined with age to 0.9% and 0.5% for those aged 75 and over. The proportions of men and women of different ages with a PGSI score of one or more is shown in Figure 5.1.

Figure 5.1

At-risk gambling prevalence (PGSI score of one or more), by age and sex

Base: All aged 16 and over with a valid PGSI score

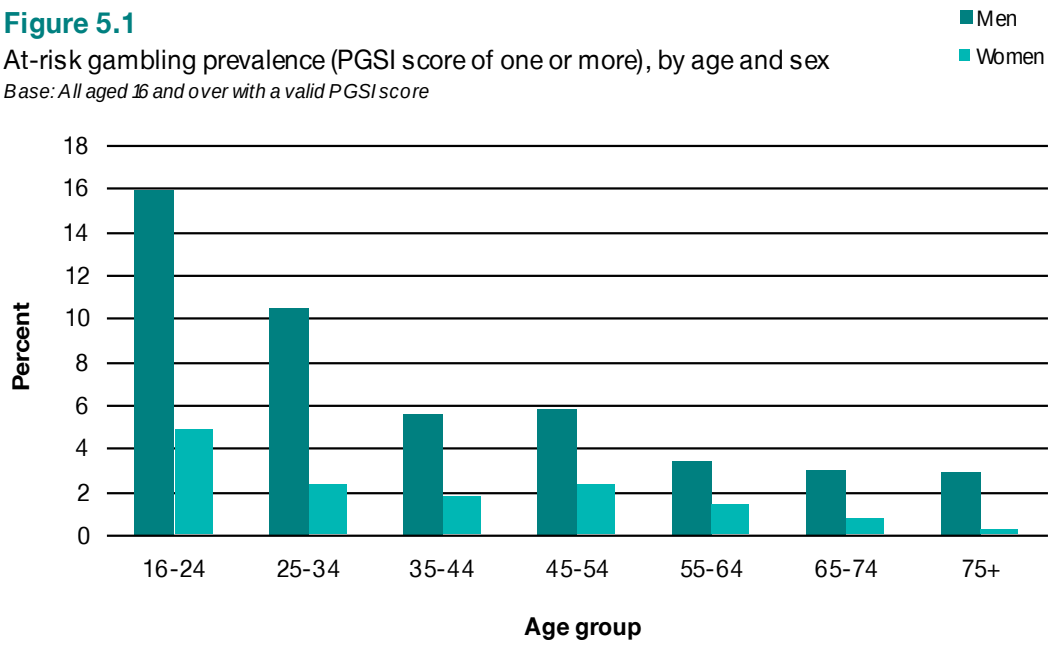


Table 5.1

PGSI Status, by age and sex

All aged 16 and over with a valid PGSI Score *2012*

PGSI Status	Age							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
Men								
Non-problem gambler/non-gambler	84.2	89.7	94.4	94.1	96.7	97.0	97.0	92.8
Low risk gambler	11.2	7.3	3.1	3.9	2.3	1.8	1.7	4.8
Moderate risk gambler	3.0	2.2	2.0	1.6	0.6	0.8	1.2	1.7
Problem gambler	1.7	0.9	0.5	0.3	0.5	0.4	0.0	0.7
Women								
Non-problem gambler/non-gambler	95.0	97.6	98.3	97.7	98.7	99.3	99.8	97.9
Low risk gambler	3.3	2.0	1.0	2.1	0.9	0.7	0.2	1.6
Moderate risk gambler	1.5	0.3	0.5	0.1	0.2	-	-	0.4
Problem gambler	0.1	-	0.3	0.1	0.2	-	-	0.1
All								
Non-problem gambler/non-gambler	89.5	93.7	96.3	95.9	97.7	98.2	98.6	95.4
Low risk gambler	7.3	4.7	2.1	3.0	1.6	1.2	0.9	3.2
Moderate risk gambler	2.3	1.2	1.2	0.9	0.4	0.4	0.5	1.0
Problem gambler	0.9	0.4	0.4	0.2	0.3	0.2	0.0	0.4
Bases (weighted)								
Men	*806*	*909*	*929*	*925*	*777*	*557*	*403*	*5306*
Women	*782*	*909*	*947*	*947*	*802*	*605*	*558*	*5551*
All	*1589*	*1819*	*1876*	*1872*	*1579*	*1162*	*961*	*10857*
Bases (unweighted)								
Men	*460*	*586*	*820*	*867*	*827*	*819*	*447*	*4826*
Women	*598*	*874*	*1057*	*1123*	*960*	*802*	*617*	*6031*
All	*1058*	*1460*	*1877*	*1990*	*1787*	*1621*	*1064*	*10857*

5.3 At-risk gambling by socio-demographic, health and lifestyle characteristics

5.3.1 Prevalence of at-risk gambling by socio-demographic characteristics

As detailed in this section prevalence of at-risk gambling varied by a range of socio-demographic factors (Table 5.2). Prevalence varied by marital status, religion, educational qualifications and economic activity. Prevalence of at-risk gambling did not vary by ethnicity, National Statistician's Socio-Economic Classification (NS-SEC) (a common system of social classification) or household income.

Looking first at marital status, the highest rates of both low and moderate risk gambling were observed among those who were single and never married (6.3% and 2.0% respectively) and the lowest rates were found among those who were widowed (0.4% and 0.5% respectively). These associations are likely to be a reflection of the relationship between at-risk gambling and age.

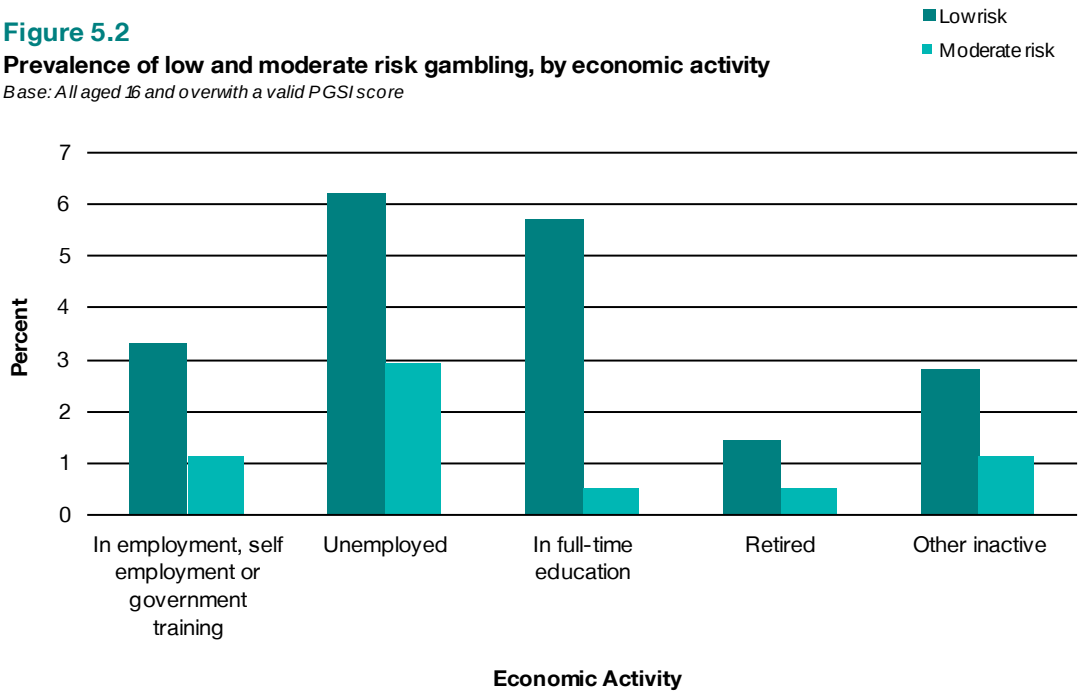
Secondly, prevalence of at-risk gambling varied by religion, although the patterns were different for low and moderate risk gambling. Prevalence of low risk gambling was highest among Catholic Christians (4.4%) and lowest among Muslims (1.0%) whereas prevalence of moderate risk gambling

was highest among those of other religions[5] (1.6%) and lowest among non-Catholic Christians (0.6%). As no Muslims were categorised as moderate risk in the data, this group were excluded from the analysis of moderate risk gambling prevalence. To place this in context, PGSI problem gambling rates among those from other religious groups were high (3%) whereas among Catholics and Muslims they were lower (0.3% and 0.8% respectively).

The association between educational qualifications and at-risk gambling was also different for low and moderate risk gamblers. Prevalence of low risk gambling was highest among those with A-levels (or equivalent) (5.6%) and lowest among those educated to degree level or higher (2.2%). However, rates of moderate risk gambling were highest among those with either GCSEs (or equivalent) or higher educational qualifications (below degree level) (both 1.6%), and lowest among those without formal qualifications (0.5%).

Figure 5.2 shows the prevalence of at-risk gambling by economic activity, with similar patterns being observed for both low risk and moderate risk gambling. Prevalence of both low and moderate risk gambling was highest among those who were unemployed (6.2% and 2.9% respectively) and lowest among those who were retired (1.4% and 0.5% respectively). Rates of low risk gambling were also higher among those who were in full-time education. As with marital status, these patterns could partly be a reflection of the association between at-risk gambling and age as those in full-time education tend to be younger and at-risk gambling is more prevalent among younger people.

Figure 5.2
Prevalence of low and moderate risk gambling, by economic activity
Base: All aged 16 and over with a valid PGSI score



Finally prevalence of *low risk* gambling only was associated with both household tenure and household composition. For tenure the highest rates of low risk gambling were observed among those who were renting from a council or housing association (4.9%) and the lowest rates seen among those who owned their property outright (2.1%). For household composition, low risk gambling was highest among those living in large adult only households (4.4%) and lowest among

those living alone (2.4%) or living with one other adult (2.6%). Prevalence of *moderate risk* gambling did not vary by either household tenure or household composition.

Table 5.2

At-risk gambling prevalence by socio-demographic characteristics

All aged 16 and over with a valid PGSI score *2012*

Socio-demographic characteristics		PGSI risk category: PGSI low risk gamblers	PGSI risk category: PGSI moderate risk gamblers	*Bases (weighted)*	*Bases (unweighted)*
Marital status					
Married/living as married	%	2.5	0.7	*6891*	*6628*
Separated/divorced	%	1.7	1.1	*1063*	*958*
Single, never married	%	6.2	2.0	*2099*	*2622*
Widowed	%	0.4	0.5	*802*	*647*
Ethnic group					
White/White British	%	3.2	1.1	*10081*	*9675*
Asian/Asian British	%	1.8	0.5	*452*	*709*
Black/Black British	%	2.6	1.2	*177*	*259*
Mixed/other	%	5.9	0.5	*136*	*202*
Religion					
No religion	%	3.7	1.4	*3611*	*3647*
Christian – Catholic	%	4.4	1.2	*1833*	*2051*
Christian – other denominations	%	2.4	0.6	*4778*	*4222*
Muslim	%	1.0	-	*240*	*393*
Any other religion	%	2.5	1.6	*329*	*453*
Highest educational qualification					
Degree or higher (or equivalent)	%	2.2	0.7	*2897*	*2916*
Higher education below degree level	%	2.7	1.6	*1230*	*1213*
A-level or equivalent	%	5.6	1.0	*1691*	*1902*
GCSEs or equivalent	%	3.2	1.6	*2658*	*2650*
Other/none	%	2.5	0.5	*2365*	*2161*
NS-SEC of Household Reference Person					
Managerial & professional	%	2.7	0.9	*4449*	*4527*
Intermediate	%	2.7	0.8	*2327*	*2403*
Routine & manual	%	3.7	1.3	*3831*	*3581*
Economic activity of individual					
In employment, self-employment or government training	%	3.3	1.1	*5788*	*6121*
Unemployed	%	6.2	2.9	*543*	*715*
In full-time education	%	5.7	0.5	*437*	*595*
Retired	%	1.4	0.5	*2845*	*2278*
Other inactive	%	2.8	1.1	*1233*	*1133*
Tenure					
Buying with a mortgage/loan	%	3.0	0.9	*3848*	*3659*
Own outright	%	2.1	0.6	*1915*	*1484*
Rent from private landlord	%	3.6	1.8	*3225*	*3678*
Rent from council/housing association	%	4.9	1.5	*1675*	*1823*
Other	%	4.1	1.1	*174*	*197*
Household make-up					
Single person household	%	2.4	1.1	*2113*	*1788*
Two adults, no children	%	2.6	0.6	*3993*	*3564*
Small family	%	3.1	1.0	*2079*	*1921*
Large family	%	3.2	1.4	*651*	*680*
Large adult only household	%	4.4	1.5	*2018*	*2900*
Household income quintile					
1st (highest)	%	2.4	0.7	*1887*	*1941*
2nd	%	2.7	1.0	*1838*	*1748*
3rd	%	3.7	1.4	*1827*	*1748*
4th	%	2.8	1.0	*1833*	*1651*
5th (lowest)	%	3.3	1.5	*1779*	*1763*

5.3.2 Prevalence of at-risk gambling by health and lifestyle characteristics

At-risk gambling was not associated with general health status or Body Mass Index (BMI) status but was found to vary by a range of other health and lifestyle factors.

Firstly, prevalence of low risk gambling was lower among those with a long-term illnesses, be it limiting (2.2%) or non-limiting (2.5%), than those without a long-term illness (3.7%). There was no association between long-term illness and moderate risk gambling. As observed in Chapter 3, those with a longstanding illness are less likely to gamble overall.

Prevalence of at-risk gambling was also associated with both smoking behaviour and alcohol consumption. Both low and moderate risk gambling were more prevalent among current cigarette smokers (estimates were 5.9% and 1.8% respectively) than non-smokers (2.5% and 0.8% respectively). Prevalence rates did not vary according to the number of cigarettes smoked.

The pattern with alcohol consumption was more nuanced. Firstly, prevalence rates of low risk gambling were higher among those who drank alcohol (3.4%) than those who did not (1.4%). Like smoking, rates of low risk gambling did not vary based on *frequency* of alcohol consumption. Therefore, when looking at low risk gambling, it is whether someone drinks alcohol rather than how often that seems to be important.

For moderate risk gambling, a different pattern was observed. Prevalence rates between drinkers and non-drinkers did not vary but, among those who did drink, there were differences by frequency of alcohol consumption. Prevalence of moderate risk gambling was higher among those who drank three or four days a week (1.7%) and lowest among those who drank less than once a month (0.5%).

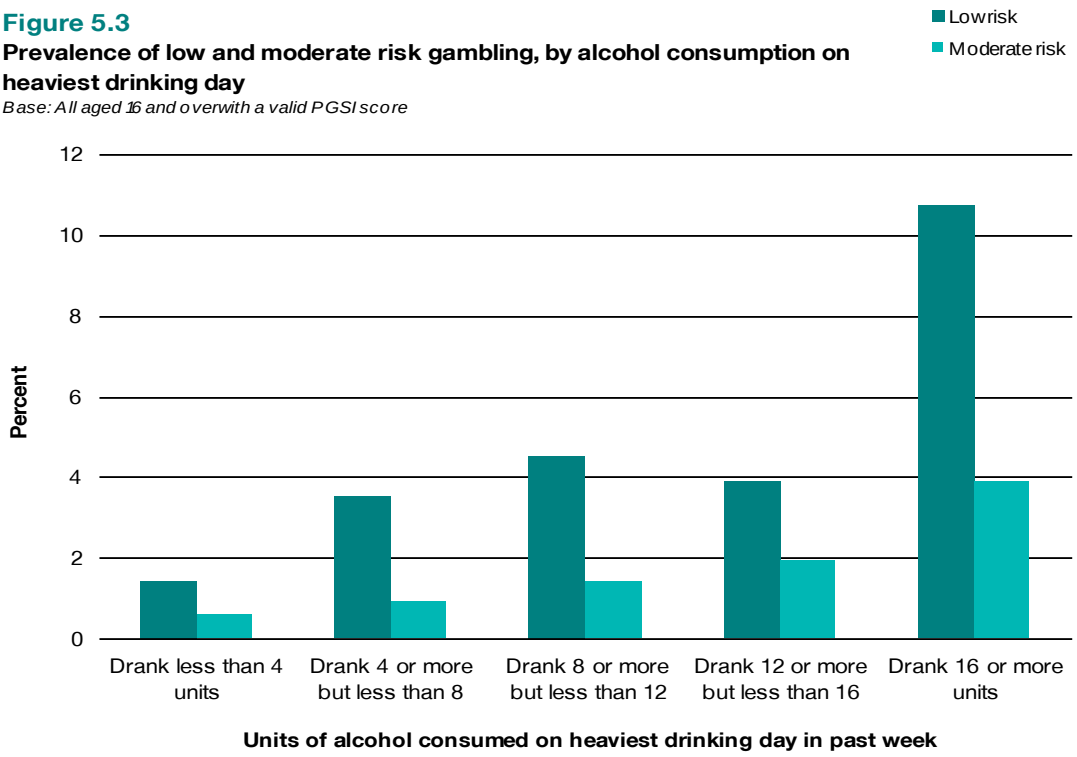
As shown in Figure 5.3, both low and moderate risk gambling were associated with the quantity of alcohol consumed on the heaviest day of drinking in the preceding week. Prevalence of at-risk gambling was highest among those who drank the most alcohol (16 or more units) where 10.7% were classed as low risk gamblers and 3.9% were classed as moderate risk gamblers. Prevalence rates were lowest among those who drank the least amount of alcohol on the heaviest drinking day (less than four units), with1.4% being classed as low risk gamblers and 0.6% as moderate risk gamblers.

As noted in Chapter 3, those who smoked or consumed alcohol were more likely to be past year gamblers. Here it appears they are also more likely to experience some difficulties with their gambling behaviour.

Figure 5.3

Prevalence of low and moderate risk gambling, by alcohol consumption on heaviest drinking day

Base: All aged 16 and over with a valid PGSI score



Both blood pressure status and physical activity were also associated with low but not moderate risk gambling. Prevalence of low risk gambling was higher among those who had never had doctor-diagnosed high blood pressure (3.5%) than those who had (2.1% for those currently being treated and 2.3% for those not currently being treated). Prevalence of low risk gambling was also higher among those who had done physical exercise in the preceding four weeks (3.9%) than those who had not (2.5%). As with some of the socio-demographic characteristics, these associations may be partly a reflection of the age profile of each group.

In addition to *physical* health and wellbeing a number of studies have suggested that gambling behaviour may be associated with *psychological* health and wellbeing.[6] Two measures of mental health and wellbeing were included in the HSE and SHeS 2012: the 12-item General Health Questionnaire (GHQ-12)[7] and the 14-item Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS).[8] The key distinction between the two is that the first focuses specifically on the identification of mental *ill-health* whereas the second is designed as a broader measure of mental *wellbeing*. No formal thresholds exist for identifying probable mental ill-heath using these scales but for this analysis, and in keeping with health surveys, the GHQ-12 was grouped into three categories:

GHQ-12	Category
0	No evidence of probable mental ill health
1-3	Less than optimal mental health
4 or more	Probable psychological disturbance or mental ill health

The WEMWBS was analysed both as a continuous and categorical measure. For the categorical measure, those with the lowest 10% of scores were defined as having low mental wellbeing whilst all other respondents were categorised as having 'other wellbeing scores'.[9]

Both low and moderate risk gambling were higher among those with higher GHQ-12 scores. These ranged from 4.2% and 1.5% (respectively) for those with a score of 4 or more to 2.8% and 0.7% for those with a GHQ-12 score of 0. There was no difference in prevalence between those with the lowest WEMWBS scores and the rest of the population. However, mean WEMWBS scores did vary by at-risk status (see Table 5.4). As Figure 5.4 shows, there was little difference in mean WEMWBS between non-gamblers and non-problem gamblers (52.0 and 52.6 respectively) but as risk level began to rise mean mental wellbeing score began to reduce (Figure 5.4 also shows mean WEMWBS scores among PGSI problem gamblers for completeness).

Interestingly, those with a low WEMWBS score were less likely to gamble. However, it appears that those who do gamble are more likely to experience difficulties with their gambling behaviour (see Chapter 3).

Figure 5.4
Mean WEMWBS score, by PGSI category
Base: All aged 16 and over

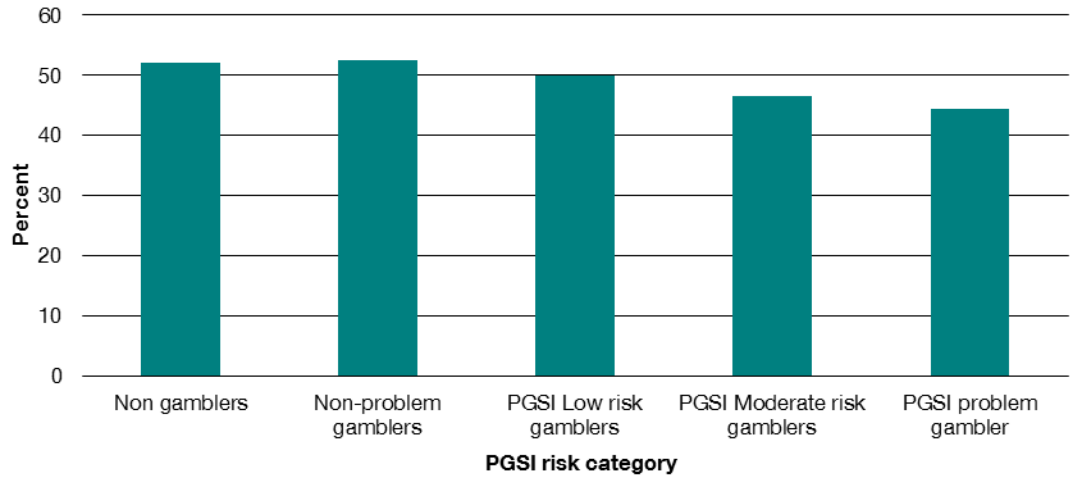


Table 5.3

At-risk gambling prevalence by health and lifestyle characteristics

All aged 16 and over with a valid PGSI score 2012

Health and lifestyle characteristics		PGSI risk category		*Bases (weighted)*	*Bases (unweighted)*
		PGSI low risk gamblers	PGSI moderate risk gamblers		
General health status					
Very good/good	%	3.3	1.0	*8088*	*8355*
Fair	%	3.1	1.2	*1937*	*1798*
Bad/very bad	%	1.9	1.5	*829*	*702*
Presence of a longstanding illness					
Limiting long-term illness	%	2.2	1.0	*2910*	*2354*
Non-limiting illness	%	2.5	0.7	*1830*	*1783*
No limiting illness	%	3.7	1.1	*6104*	*6706*
Cigarette smoking status					
Light smokers, under 10 a day	%	6.5	1.5	*690*	*760*
Moderate smokers, 10 to under 20 a day	%	4.8	2.0	*959*	*900*
Heavy smokers	%	7.2	2.1	*515*	*454*
All current smokers	*%*	*5.9*	*1.8*	*2196*	*2132**
Non-smoker	%	2.5	0.8	*8633*	*8677*
Frequency of drinking alcohol					
Every day/almost every day	%	3.4	0.6	*1368*	*1391*
Three or four days a week	%	3.4	1.7	*1515*	*1588*
Once or twice a week	%	3.6	1.3	*3016*	*2944*
Once or twice a month	%	4.7	1.1	*1527*	*1502*
Less than once a month	%	2.3	0.5	*1751*	*1731*
All current drinkers	*%*	*3.4*	*1.0*	*9282*	*9283*
Do not drink	%	1.4	0.9	*1646*	*1646*
Units of alcohol consumed on heaviest drinking day in past week					
Drank less than 4 units	%	1.4	0.6	*2516*	*2540*
Drank 4 or more but less than 8	%	3.5	0.9	*2014*	*1981*
Drank 8 or more but less than 12	%	4.5	1.4	*1007*	*1016*
Drank 12 or more but less than 16	%	3.9	1.9	*494*	*512*
Drank 16 or more units on heaviest drinking day	%	10.7	3.9	*471*	*503*
Blood pressure status					
Has high blood pressure – takes medication	%	2.1	0.7	*1992*	*1667*
Has high blood pressure – does not currently take medication	%	2.3	0.8	*905*	*816*
Has never had high blood pressure	%	3.5	1.1	*7947*	*8358*
BMI					
Less than 25	%	3.6	1.0	*3270*	*3637*
25 to less than 30	%	3.6	1.2	*3618*	*3511*
30 and over	%	2.4	1.0	*2609*	*2396*
WEMWBS status					
Low wellbeing score	%	3.6	1.7	*858*	*636*
Other wellbeing score	%	3.1	0.8	*7378*	*6338*
GHQ-12 Score					
Score 0	%	2.8	0.7	*6566*	*6484*
Score 1-3	%	3.6	1.5	*2446*	*2491*
Score 4+	%	4.2	1.5	*1586*	*1600*
Whether did any exercise activities in past four weeks					
Yes	%	3.9	1.2	*4897*	*5347*
No	%	2.5	0.9	*5960*	*5510*

Table 5.4

Mean WEMWBS score by PGSI risk category

All aged 16 and over with a valid PGSI of less than 8 and a valid WEMWBS score *2012*

WEMWBS score	PGSI risk category				Total
	Non-gamblers	Non-problem gamblers	PGSI Low risk gamblers	PGSI Moderate risk gamblers	
Mean WEMWBS Score	52.0	52.6	50.0	46.6	52.2
Standard error of mean	0.24	0.16	0.75	1.13	0.14
Bases (unweighted)	*2851*	*5073*	*216*	*69*	*8209*
Bases (weighted)	*2481*	*4188*	*222*	*64*	*6955*

5.4 Prevalence of at-risk gambling by Latent Class Analysis group

This section examines the prevalence of low and moderate risk gambling by the Latent Class Analysis (LCA) grouping assigned in Chapter 3.[10] Results are shown in Table 5.5. The LCA was conducted individually for both men and women, resulting in different groupings for each. Therefore, there are no figures for all adults.[11]

Among men prevalence of low risk gambling was highest among those in the multiple group, where 40.4% were classified as low risk gamblers. This was followed by those in the multiple high group (26.6%) and then those in the moderate group (11.5%). The highest prevalence of moderate risk gambling was found among those in the multiple high group (29.7%) followed by the multiple (11.7%) and then moderate groups (5.4%). Taken together, this means that over half of men in each of the multiple groups had a PGSI score of one or more. (See Chapter 6 for problem gambling estimates by LCA group).

Among women the highest prevalence of low risk gambling was also found among those in the multiple group (8.8%) followed by the moderate (more varied) group (4.4%) and then the National Lottery Draw and scratchcards only group (2.2%). The pattern for moderate risk gambling was similar, with the highest prevalence of moderate risk gambling found among those in the multiple group (3.3%) followed by the moderate (more varied) group (1.0%) but then the minimal (no National Lottery Draw) group (0.7%). The figure for women should be treated with care as the overall number of women classed as PGSI moderate risk gamblers was low and several of the groups had no (or very few) cases.

Table 5.5

At-risk gambling prevalence by group from Latent Class Analysis (LCA)

All aged 16 and over with a valid PGSI score 2012

LCA group		PGSI risk category		*Bases (weighted)*	*Bases (unweighted)*
		PGSI low risk gamblers	PGSI moderate risk gamblers		
Men					
A Non-gamblers	%	-	-	*1777*	*1539*
B National Lottery Draw only	%	0.9	-	*1076*	*1095*
C Minimal – lotteries and scratchcards	%	4.8	1.2	*1064*	*1008*
D Minimal - no National Lottery Draw	%	5.8	0.6	*460*	*388*
E Moderate	%	11.5	5.4	*687*	*604*
F Multiple	%	40.4	11.7	*186*	*151*
G Multiple high	%	[26.6]	[29.7]	*57*	*41*
Women					
A Non-gamblers	%	-	-	*2257*	*2336*
B National Lottery Draw only	%	1.0	0.1	*1124*	*1341*
C National Lottery Draw and scratchcards only	%	2.2	-	*366*	*399*
D Minimal - no National Lottery Draw	%	1.9	0.7	*412*	*425*
E Moderate – less varied	%	0.7	-	*439*	*524*
F Moderate – more varied	%	4.4	1.0	*605*	*658*
G Multiple	%	8.8	3.3	*347*	*348*

5.5 Prevalence of at-risk gambling by gambling activity

Table 5.6 presents the prevalence of at-risk gambling behaviour by gambling activity. When interpreting these findings it should be noted that those who gamble frequently tend to take part in a range of different activities. Such gamblers are therefore likely to be captured across a range of the activities below and these categories are not mutually exclusive.

Table 5.6

At-risk gambling prevalence, by activity

Past year gamblers aged 16+ with a valid PGSI score — *2012*

Gambling activity		PGSI risk category: PGSI low risk gamblers	PGSI moderate risk gamblers	All PGSI at-risk gamblers	*Bases (weighted)*	*Bases (unweighted)*
Lotteries and related products						
National Lottery Draw	%	4.5	1.6	6.2	*5868*	*5602*
Scratchcards	%	8.0	3.1	11.1	*1999*	*2120*
Other lotteries	%	6.0	2.8	8.8	*1609*	*1551*
Machines/games						
Football pools	%	22.6	8.3	30.9	*318*	*308*
Bingo (not online)	%	7.4	3.4	10.8	*663*	*600*
Slot machines	%	16.2	6.5	22.7	*673*	*795*
Machines in a bookmaker's	%	23.3	14.7	38.0	*262*	*333*
Casino table games (not online)	%	20.2	6.4	26.6	*300*	*365*
Poker played in pubs or clubs	%	18.1	17.7	35.8	*108*	*148*
Online gambling on slots, casino or bingo games	%	26.0	11.2	37.1	*294*	*350*
Betting activities						
Online betting with a bookmaker	%	17.4	6.3	23.6	*493*	*555*
Betting exchange	%	31.1	6.8	37.8	*77*	*103*
Horse races (not online)	%	9.5	4.0	13.5	*1100*	*1136*
Dog races (not online)	%	11.2	5.8	17.0	*262*	*315*
Sports events (not online)	%	18.1	9.0	27.1	*480*	*527*
Other events (not online)	%	22.4	10.5	32.9	*119*	*124*
Spread-betting	%	20.8	21.8	42.6	*51*	*60*
Private betting	%	13.9	6.9	20.8	*436*	*595*
Other gambling activity						
Any other gambling	%	11.6	10.9	22.5	*149*	*173*
Any gambling (excluding National Lottery Draw)	%	7.0	2.4	9.4	*4546*	*4623*
Any online gambling (excluding National Lottery)	%	18.8	6.5	25.3	*704*	*793*

The highest overall prevalence of at-risk gambling (i.e., combining both low and moderate risk gambling) was observed among those who participated in spread-betting (42.6%) followed by gambling on machines in bookmakers (38.0%) and betting exchanges (37.8%). Looking at rates of low and moderate risk gambling by activity reveals some nuances within this. The highest prevalence of moderate risk gambling was observed among those who participated in spread-betting (21.8%) followed by poker played in pubs or clubs (17.7%) and then machines in bookmakers (14.7%). The highest prevalence of low risk gambling behaviour was seen among those who had participated in gambling on betting exchanges (31.1%) followed by machines in bookmakers (23.3%) and the football pools (22.6%). Across both low and moderate risk gambling the lowest prevalence rates were found among those who participated in the National Lottery Draw (4.5% and 1.6% respectively) or other lotteries (6.0% and 2.8% respectively).

5.6 Factors associated with at-risk gambling

Multivariatel logistic regression was used to examine the factors associated with the likelihood of being a PGSI risk gambler (both low risk and moderate risk combined) while controlling for other potentially confounding factors.[12] The range of variables included in the model were similar to those used in Chapter 4, with the exception that GHQ-12 and limiting longstanding illness were excluded because of co-linearity with other variables and, in the case of GHQ-12, the outcome of interest. See Appendix A for fuller details of how the models were developed.

Only variables that were statistically significant in the final model ($p<0.05$) are presented in the table. Odds ratios are also presented for each comparison category and these should be interpreted relative to the reference categories, all of which have an odds ratio of 1. An odds ratio of less than 1 indicates lower odds of belonging to a higher PGSI group among individuals in that category than the reference category and an odds ratio of greater than 1 indicates increased odds. 95% confidence intervals are presented for each comparison category and where these do not straddle 1.0 for any category, then the odds for that category are significantly different to the reference category.

As shown in Table 5.7, a range of characteristics were associated with at-risk gambling. These were: sex, age, religion, smoking status and alcohol consumption.

The odds of being an at-risk gambler rather than a non-problem gambler were about 3 times higher among men than women. Younger respondents were more likely to be at-risk gamblers. For example, the odds of being an at risk gambler were over five times higher (5.6) among those aged 16-24 than those aged 75 and over.

Muslim respondents were more likely to be at-risk gamblers compared with any other religious group or those with no religion, with the odds being 0.22 times lower among muslim groups.

In terms of health and lifestyle factors, smoking and heavy drinking was associated with an increased probability of being an at-risk gambler. For example, the odds of being a heavy smoker were around 3 times (2.74) higher for those who smoked more than 20 cigarettes per day than those who did not smoke. Likewise, the odds of being an at risk gambler were 2.18 times higher among those who consumed the most alcohol on their heaviest drinking day than those who did not drink in the past week. This shows that the association between alcohol, smoking and at-risk gambling extends beyond whether or not someone smokes or drinks. How much someone smokes and drinks is also important, with those with highest levels of consumption being more likely to be at-risk gamblers.

Table 5.7

Estimated odds ratios for being classified as a PGSI risk gambler (excluding problem gamblers)

All aged 16 and over with a valid PGSI score of less than 8 *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI[a]		*n*
		Lower	Upper	
Sex (p<0.001)				
Female	1			*6023*
Male	3.13	2.37	4.14	*4791*
Age group (p<0.001)				
16-24	5.68	2.78	11.61	*1052*
25-34	3.26	1.60	6.62	*1451*
35-44	1.75	0.86	3.58	*1864*
45-54	1.90	0.93	3.85	*1985*
55-64	1.03	0.48	2.20	*1781*
65-74	0.94	0.44	2.00	*1618*
75+	1			*1063*
Religion (p=0.018)				
No religion	1			*3595*
Christian – Catholic	1.62	1.11	2.30	*1826*
Christian – other denominations	1.19	0.84	1.63	*4766*
Muslim	0.22	0.06	0.77	*238*
Any other religion	1.12	0.49	2.59	*324*
Not answered	1.20	0.23	6.12	*65*
Cigarette smoking status (p<0.001)				
Non-smoker	1			*8610*
Light smokers, under 10 a day	1.71	1.12	2.61	*686*
Moderate smokers, 10 to under 20 a day	1.69	1.14	2.50	*952*
Heavy smokers, 20 or more a day	2.74	1.80	4.19	*507*
Cigarette consumption unknown	0.94	0.27	3.21	*59*
Alcohol consumption (p<0.001)				
Did not drink in previous 7 days	1			*4272*
Drank less than 4 units	0.64	0.42	0.98	*2575*
Drank 4 or more but less than 8	1.23	0.82	1.84	*2010*
Drank 8 or more but less than 12	1.30	0.83	2.05	*1003*
Drank 12 or more but less than 16	1.13	0.65	1.98	*489*
Drank 16 or more units on heaviest drinking day	2.18	1.43	3.32	*465*

[a] Confidence interval.

Notes and references

[1] Ferris, J., Wynne, H. (2001). *The Canadian Problem Gambling Index: Final report*. Ottawa: Canadian Centre on Substance Abuse.

[2] The PGSI has been used in surveys in 11 Canadian provinces, three Australian states and New Zealand as well as the Nordic countries of Iceland, Norway and Sweden.

[3] Wardle, H., Moody, A., Spence, S., Orford, J., Volberg, R., Jotangia, D., Griffiths, M., Hussey, D., Dobbie, F. (2011) *British Gambling Prevalence Survey 2010.* London: National Centre for Social Research.

[4] This is the total number of problem gamblers as defined by the PGSI screen.

[5] This includes Buddhism, Hinduism, Judaism, Sikhism and those who described themselves as being of any other religion. The numbers of at-risk and problem gamblers in these groups were too small for them to be reported individually.

[6] Forrest, D. (2014) *The unhappiness of problem gamblers*. Paper presented at the 3rd Symposium on Excessive Gambling, Neuchatel, Switzerland. Available at: www.problem**gambling**.ch/wp/wp.../**Forrest**_Présentation_NE14.pdf

[7] Goldberg, D., Williams, P.A. (1988) *User Guide to the General Health Questionnaire*. NFER-Nelson, Windsor, UK.

[8] Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S. et al. (2007)The Warwick-Edinburgh mental wellbeing scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, 5:1-13.

[9] This was also the approach taken in the 2012 HSE Report: Bridges, S. (2013) 'Wellbeing' in Craig, R., Mindell, J. (eds) *Health Survey for England 2012 Volume 1: Health, social care and lifestyles.* Leeds: Health and Social Care Information Centre.

[10] See Chapter 4 for a full explanation of the Latent Class Analysis and details of how this was calculated.

[11] Problem gambling estimates by each LCA group are presented in Chapter 6.

[12] Multivariate ordinal regression models were also produced and gave very similar results to the logistic regression model. As the logistic regression model is easier to interpret, it is this analysis which is presented in the final report.

6 Prevalence and profile of problem gamblers

6.1 Introduction

'Problem gambling' is typically defined as gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits.[1] This chapter presents information about the prevalence of problem gambling among adults (aged 16 and over) living in private households in England and Scotland. It also examines how rates of problem gambling vary according to a range of socio-demographic, economic, health and lifestyle characteristics.

Many different instruments or 'screens' exist to measure problem gambling. Gambling studies in Great Britain have historically used problem gambling screens based on two different measures: the DSM-IV criteria[2] and the Problem Gambling Severity Index (PGSI).[3] The Health Survey for England (HSE) and Scottish Health Survey (SHeS) followed this custom largely to maintain comparability with the British Gambling prevalence Survey (BGPS) 2007 and 2010. In this chapter, problem gambling estimates according to each screen are presented first, followed by examination of prevalence rates according to whether someone was defined as a problem gambler by either the DSM-IV or the PGSI. Examination of how problem gambling rates vary according to a range of other characteristics uses this latter measure. This is partially to increase the number of problem gamblers included in analysis and partially for clarity for the reader. This is a less conservative measure of problem gambling. However, as there is no 'gold standard' method to measure problem gambling in a survey setting, it seems prudent to define people as problem gamblers more generally if they were a problem gambler according to either screen.

There are two ways in which to measure problem gambling: based on either 'lifetime' or 'current' prevalence rates. The health surveys used 'current' prevalence rates, with all questions being prefaced with reference to problems occurring 'in the past 12 months'. Again, this is largely to maintain comparability with previous studies but this approach is also advantageous as current rates are more relevant to the development of gambling policy.

6.2 Problem gambling screens

6.2.1 The DSM-IV

The DSM-IV screening instrument is based on criteria from the fourth edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV).[4] This contains ten diagnostic criteria ranging from 'chasing losses' to 'committing a crime to fund gambling'. The DSM-IV criteria constitute a tool created for diagnosis by clinicians of pathological gambling, and were not intended for use as a screening instrument among the general population. Therefore, there is no recommended questionnaire version of the DSM-IV. An adapted version of the DSM-IV to use in a survey setting was developed for the BGPS series and was subject to a rigorous development and

testing process, including cognitive testing and piloting. Each DSM-IV item is assessed on a four-point scale, ranging from 'never' to 'very often'.[5] Responses to each item can either be dichotomised to show whether a person meets the criteria or not, or allocated a score and a total score produced. (The PGSI uses this latter method, see below.) The BGPS series used the dichotomous scoring method and it is this method that is presented in this chapter. A total score between zero and ten is possible. The scoring of each of the DSM-IV items is described in Appendix A.

Among clinicians, a diagnosis of pathological gambling is made if a person meets five out of the ten criteria. Many surveys, when adapting the DSM-IV criteria into a screening instrument for use within a general population survey, have included a further category of 'problem gambler' for those who meet at least three of the DSM-IV criteria.[6] This approach was adopted for the BGPS series and is replicated here.

6.2.2 The PGSI

The PGSI was developed by Ferris and Wynne over a three-year period. It was specifically developed for use among the general population rather than within a clinical context. It was developed, tested and validated within a general population survey of over 3,000 Canadian residents.[7] The instrument itself has been subject to critical evaluation and was revised in 2003.[8]

The PGSI consists of nine items ranging from 'chasing losses' to 'gambling causing health problems' to 'feeling guilty about gambling'. Each item is assessed on a four-point scale: never, sometimes, most of the time, almost always. Responses to each item are given the following scores: never = zero; sometimes = one; most of the time = two; almost always = three. When scores to each item are summed, a total score ranging from zero to 27 is possible. A PGSI score of eight or more represents a problem gambler.[9] This is the threshold recommended by the developers of the PGSI and the threshold used in this report. The PGSI was also developed to give further information on sub-threshold problem gamblers. PGSI scores between three and seven are indicative of 'moderate risk' gambling and a score of one or two is indicative of 'low risk' gambling. The at-risk groups are discussed further in Chapter 5. This chapter focuses solely on the category of problem gambler.

6.3 Caveats

There are a number of caveats which need to be considered when interpreting the problem gambling estimates:

- Findings relate to adults aged 16 and over, who live in private households in England and Scotland. Those living in institutions, such as prisons, care homes or student halls of residence, and the homeless, were outside the scope of the survey. There is evidence to suggest that some of these sub-groups are more likely to be problem gamblers.[10] As a result, it is possible that the problem gambling estimates presented in this chapter may underestimate the prevalence of problem gambling in England and Scotland.

- The HSE and SHeS are cross-sectional surveys, hence associations can be identified in the analysis, but the direction of causality cannot be ascertained.

- Some people may give 'socially desirable' (and potentially dishonest) answers to a questionnaire and may underestimate the extent of their gambling behaviour.

- There is an argument that very frequent gamblers are less likely to be at home and available for interview than other sub-groups and are therefore less likely to be included in the study.[11] This therefore may lead to a potential underestimation of the prevalence of problem gambling in England and Scotland.

- No screen for problem gambling is perfect. The best performing screens should endeavour to minimise both 'false positives' and 'false negatives'. A false positive is where someone without a gambling problem is classified as a problem gambler. A false negative is where a person with a gambling problem is classified as someone without a gambling problem. The number of false positives and false negatives is related to the thresholds used. The DSM-IV threshold used in this current survey is the same as in the BGPS series and in other international studies. The threshold used for the PGSI follows the recommendation of the screen's developers and is the same as used in the BGPS 2007 and 2010.

- The PGSI has been validated on a Canadian population. It has not been validated in Britain. The DSM-IV criterion was developed as a diagnostic tool and has not been validated for use with the general population.

- Finally, a survey estimate is subject to sampling error and should be considered with reference to the confidence intervals (presented throughout this chapter) as well as the survey design and sample size.

Where possible, the survey methodology used attempted to overcome some of these criticisms. For example, the surveys were health surveys, not gambling specific surveys; they used self-completion methods to encourage honest reporting of the gambling questions; the results were weighted to take into account non-response bias across a number of domains; there was careful consideration of the choice of gambling screen and appropriate thresholds for problem gambling. That said, it is not possible to account for all potential biases and caveats. Therefore, this chapter presents an ***estimate*** of current problem gambling in England and Scotland.

6.4 Problem gambling prevalence

6.4.1 Prevalence according to the DSM-IV

Table 6.1 shows the prevalence of problem gambling (a DSM-IV score of 3 or more) by sex and age.

According to the DSM-IV, problem gambling prevalence among adults living in private households in England and Scotland was 0.5%. Men were more likely than women to be classified as a problem gambler according to the DSM-IV (0.8% and 0.1% respectively). The confidence interval around the total estimate is 0.3% to 0.7%, meaning that taking into account sampling error we can be 95% confident that the true estimate falls between these two values.[12]

Mean DSM-IV scores followed a similar pattern, being higher among men (0.08) than women (0.03). Figure 6.1 shows that, among men, problem gambling prevalence varied with age, being typically higher among younger age groups and decreasing as age increased. For men aged 16-24, problem gambling prevalence was 2.1% falling to 0.4% for men aged 75 and over. Mean DSM-IV followed a similar pattern, being highest among the youngest age groups and lower among older men.

Among women, there were too few observations to be able to discern a distinct pattern of problem gambling prevalence by age.

A discussion of how these estimates compare with those from the BGPS series is provided in Chapter 7, section 7.2 as these comparisons should be made with caution. However, the broad patterns are the same, in that DSM-IV problem gambling was more prevalent among men than women and among men was more prevalent among younger age groups.

Figure 6.1

Problem gambling prevalence among men according to the DSM-IV

Base: Men aged 16 and over

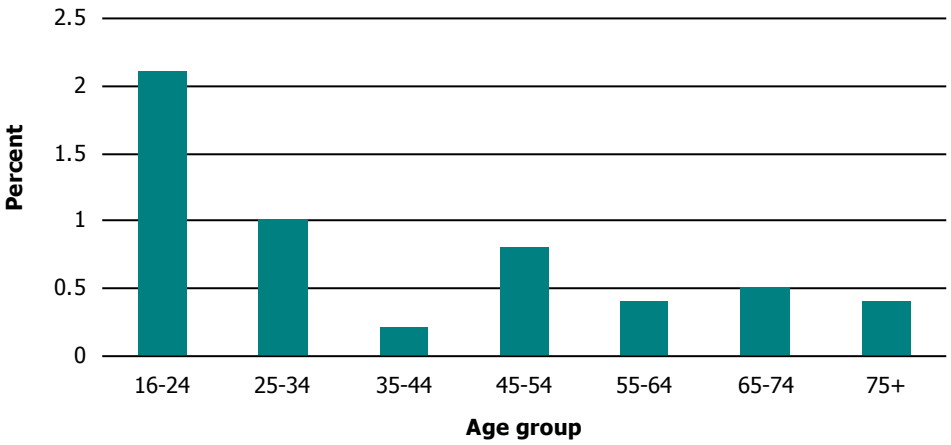


Table 6.1

Problem gambling prevalence rates according to the DSM-IV[a] in England and Scotland, by age and sex[b]

All aged 16 and over *2012*

DSM-IV score	Age group							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
Men								
DSM-IV								
Non-problem gambler (DSM-IV score <3)	97.9	99.0	99.8	99.2	99.6	99.5	99.6	99.2
Problem gambler (DSM-IV score 3+)	2.1	1.0	0.2	0.8	0.4	0.5	0.4	0.8
Mean DSM-IV score	0.18	0.13	0.05	0.07	0.04	0.04	0.02	0.08
Standard error of mean	0.07	0.04	0.01	0.02	0.02	0.01	0.01	0.01
Women								
DSM-IV								
Non-problem gambler (DSM-IV score <3)	99.7	100.0	99.6	99.9	100.0	99.8	100.0	99.9
Problem gambler (DSM-IV score 3+)	0.3	-	0.4	0.1	-	0.2	-	0.1
Mean DSM-IV score	0.05	0.02	0.04	0.02	0.01	0.04	0.01	0.03
Standard error of mean	0.02	0.01	0.01	0.01	0.01	0.02	0.00	0.00
All								
DSM-IV								
Non-problem gambler (DSM-IV score <3)	98.8	99.5	99.7	99.6	99.8	99.7	99.8	99.5
Problem gambler (DSM-IV score 3+)	1.2	0.5	0.3	0.4	0.2	0.3	0.2	0.5
Mean DSM-IV score	0.11	0.07	0.04	0.05	0.03	0.04	0.01	0.05
Standard error of mean	0.04	0.02	0.01	0.01	0.01	0.01	0.01	0.01
Bases (unweighted)								
Men	*462*	*588*	*820*	*875*	*830*	*813*	*446*	*4834*
Women	*598*	*873*	*1055*	*1122*	*963*	*807*	*620*	*6038*
All	*1060*	*1461*	*1875*	*1997*	*1793*	*1620*	*1066*	*10872*
Bases (weighted)								
Men	*808*	*911*	*930*	*926*	*778*	*557*	*404*	*5314*
Women	*783*	*910*	*948*	*948*	*803*	*606*	*558*	*5558*
All	*1591*	*1821*	*1879*	*1874*	*1581*	*1163*	*962*	*10872*

[a] DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, fourth version (1994). A score of 3 or more is indicative of problem gambling.

[b] Estimates are shown to one decimal place because of generally low problem gambling prevalence rates.

6.4.2 Prevalence according to the PGSI

According to the PGSI, problem gambling prevalence among adults in England and Scotland was 0.4%, with men again being more likely than women to be classified as a problem gambler (0.7% and 0.1% respectively). The confidence interval around the estimate for all adults was 0.2% to 0.6%, meaning we can be 95% confident that the true estimate falls between these two values.

Mean PGSI scores followed a similar pattern being higher among men (0.22) than women (0.05).

As shown in Figure 6.2, among men, PGSI problem gambling prevalence was associated with age, being typically higher among younger age groups and decreasing with advancing age. Estimates

fell from 1.7% for those aged 16-24 to 0.4% for those aged 65-74. Mean PGSI rates followed a similar pattern, being highest among the youngest age groups and lower among older men.

As with estimates for the DSM-IV, among women there were too few observations to be able to discern a distinct pattern of problem gambling prevalence by age. Likewise, comparisons with the BGPS series are given in Chapter 7, section 7.2.

Figure 6.2

Problem gambling prevalence among men according to the PGSI

Base: Men aged 16 and over

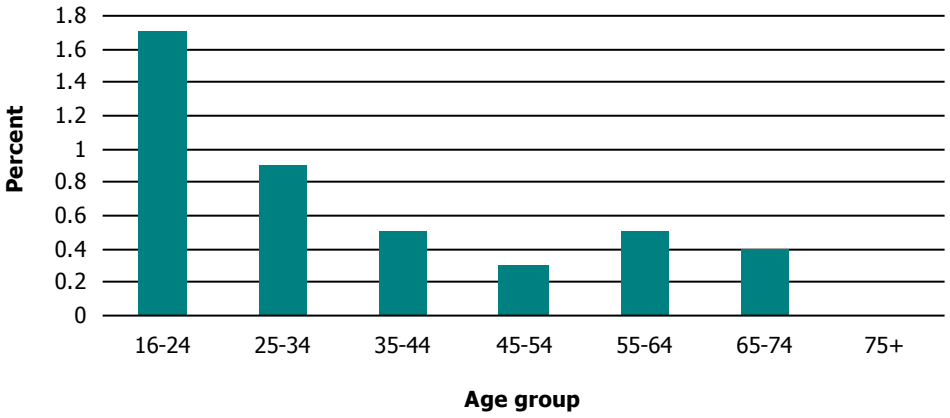


Table 6.2

Problem gambling prevalence rates according to the PGSI[a] in England and Scotland, by sex and age[b]

All aged 16 and over *2012*

PGSI scores	Age group							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
Men								
PGSI								
Non-problem (score less than 1)	84.2	89.7	94.4	94.1	96.7	97.0	97.0	92.8
Low risk (score 1-2)	11.2	7.3	3.1	3.9	2.3	1.8	1.7	4.8
Moderate risk (score 3-7)	3.0	2.2	2.0	1.6	0.6	0.8	1.2	1.7
Problem gambler (score 8+)	1.7	0.9	0.5	0.3	0.5	0.4	0.0	0.7
Problem or at-risk gambler (score 1+)	15.8	10.3	5.6	5.9	3.3	3.0	3.0	7.2
Mean PGSI score	0.45	0.34	0.19	0.16	0.11	0.10	0.09	0.22
Standard error of mean	0.15	0.08	0.04	0.03	0.03	0.03	0.03	0.03
Women								
PGSI								
Non-problem (score less than 1)	95.0	97.6	98.3	97.7	98.7	99.3	99.8	97.9
Low risk (score 1-2)	3.3	2.0	1.0	2.1	0.9	0.7	0.2	1.6
Moderate risk (score 3-7)	1.5	0.3	0.5	0.1	0.2	-	-	0.4
Problem gambler (score 8+)	0.1	-	0.3	0.1	0.2	-	-	0.1
Problem or at-risk gambler (score 1+)	5.0	2.4	1.7	2.3	1.3	0.7	0.2	2.1
Mean PGSI score	0.10	0.04	0.07	0.04	0.05	0.01	0.00	0.05
Standard error of mean	0.03	0.01	0.02	0.02	0.02	0.00	0.00	0.01

Table 6.2 (continued)

Problem gambling prevalence rates according to the PGSI[a] in England and Scotland, by sex and age[b]

All aged 16 and over *2012*

PGSI scores	Age group							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
All								
PGSI								
Non-problem (score less than 1)	89.5	93.7	96.3	95.9	97.7	98.2	98.6	95.4
Low risk (score 1-2)	7.3	4.7	2.1	3.0	1.6	1.2	0.9	3.2
Moderate risk (score 3-7)	2.3	1.2	1.2	0.9	0.4	0.4	0.5	1.0
Problem gambler (score 8+)	0.9	0.4	0.4	0.2	0.3	0.2	0.0	0.4
Problem or at-risk gambler (score 1+)	10.5	6.3	3.7	4.1	2.3	1.8	1.4	4.6
Mean PGSI score	0.28	0.19	0.13	0.10	0.08	0.05	0.04	0.13
Standard error of mean	0.08	0.04	0.03	0.02	0.02	0.02	0.01	0.02
Bases (unweighted)								
Men	*460*	*586*	*820*	*867*	*827*	*819*	*447*	*4826*
Women	*598*	*874*	*1057*	*1123*	*960*	*802*	*617*	*6031*
All	*1058*	*1460*	*1877*	*1990*	*1787*	*1621*	*1064*	*10857*
Bases (weighted)								
Men	*806*	*909*	*929*	*925*	*777*	*557*	*403*	*5306*
Women	*782*	*909*	*947*	*947*	*802*	*605*	*558*	*5551*
All	*1589*	*1819*	*1876*	*1872*	*1579*	*1162*	*961*	*10857*

[a] PGSI: Problem Gambling Severity Index. A score of 8 or more is indicative of problem gambling. A score of 1 or more is indicative of at-risk gambling.

[b] Estimates are shown to one decimal place because of generally low problem gambling prevalence rates.

6.4.3 Prevalence according to either screen

As explained in the introduction to this chapter, many different ways to measure problem gambling in population based surveys exist. For this reason, surveys measuring gambling problems in Britain have tended to include two different instruments as they capture a slightly different range of people and problems. It is therefore possible to produce a problem gambling estimate based on whether participants were categorised as a problem gamblers according to **either** the DSM-IV or the PGSI.

According to **either** the DSM-IV or PGSI, problem gambling prevalence among adults in England and Scotland was 0.6%, with men being more likely than women to be classified as a problem gambler (1.0% and 0.2% respectively). The confidence interval around the total estimate is 0.4% to 0.9%, meaning we can be 95% confident that the true estimate falls between these two values.

Unsurprisingly, this estimate was also associated with age for men (see Figure 6.3), with problem gambling prevalence being highest among those aged 16-24 (2.4%) and lowest among those aged 75 and over (0.4%).

As previously, there were too few observations among women to be able to discern a distinct pattern of problem gambling prevalence by age.

Figure 6.3

Problem gambling prevalence among men according to either the DSM-IV or PGSI

Base: Men aged 16 and over

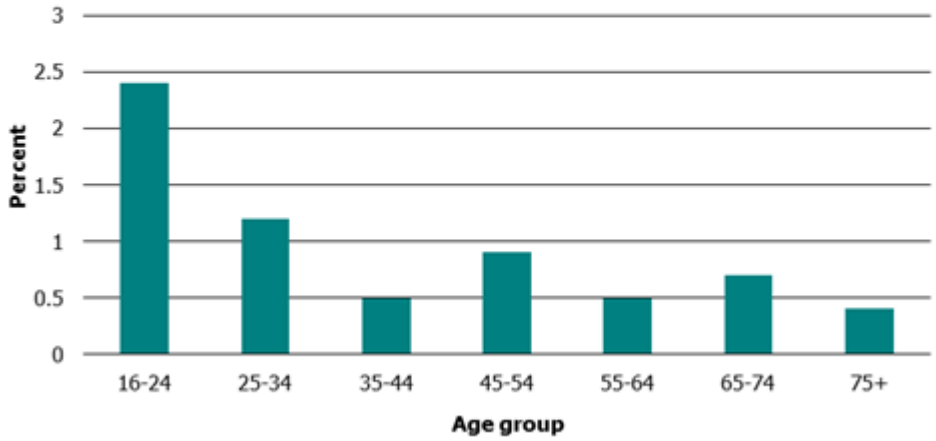


Table 6.3

Problem gambling prevalence rates according to either the DSM-IV[a] or PGSI[b] in England and Scotland, by sex and age[c]

Aged 16 and over *2012*

DSM-IV and PGSI scores	Age group							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
Men								
Either DSM-IV or PGSI								
Non-problem gambler according to **either** DSM-IV or PGSI	97.6	98.8	99.5	99.1	99.5	99.3	99.6	99.0
Problem gambler according to **either** DSM-IV or PGSI	2.4	1.2	0.5	0.9	0.5	0.7	0.4	1.0
Women								
Either DSM-IV or PGSI								
Non-problem gambler according to **either** DSM-IV or PGSI	99.7	100.0	99.4	99.9	99.8	99.8	100.0	99.8
Problem gambler according to **either** DSM-IV or PGSI	0.3	-	0.6	0.1	0.2	0.2	-	0.2
All								
Either DSM-IV or PGSI								
Non-problem gambler according to **either** DSM-IV or PGSI	98.6	99.4	99.5	99.5	99.6	99.6	99.8	99.4
Problem gambler according to **either** DSM-IV or PGSI	1.4	0.6	0.5	0.5	0.4	0.4	0.2	0.6
Bases (unweighted)								
Men	*463*	*588*	*821*	*877*	*832*	*823*	*448*	*4852*
Women	*600*	*874*	*1057*	*1125*	*969*	*810*	*622*	*6057*
All	*1063*	*1462*	*1878*	*2002*	*1801*	*1633*	*1070*	*10909*
Bases (weighted)								
Men	*811*	*910*	*931*	*933*	*781*	*565*	*406*	*5338*
Women	*785*	*910*	*949*	*950*	*810*	*610*	*562*	*5576*
All	*1596*	*1820*	*1880*	*1884*	*1591*	*1175*	*968*	*10914*

[a] DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, fourth version (1994). A score of 3 or more is indicative of problem gambling.

[b] PGSI: Problem Gambling Severity Index. A score of 8 or more is indicative of problem gambling. A score of 1 or more is indicative of at-risk gambling.

[c] Estimates are shown to one decimal place because of generally low problem gambling prevalence rates.

6.4.4 Number of problem gamblers in the population

The number of adult problem gamblers in England and Scotland is approximately 224,100, according to the DSM-IV, 180,200 according to the PGSI and approximately 280,000 according to either screen.

These estimates should be considered alongside the confidence intervals, as shown by Table 6.4. The confidence interval for the DSM-IV estimate was 0.3%–0.7%, for the PGSI estimate 0.2%–0.6% and for either screen 0.4%–0.9%. This equates to somewhere between 141,200 and 355,000 adults according to the DSM-IV, between 107,000 and 303,000 adults according to the PGSI, and between 108,900 and 413,000 adults according to either screen.

Table 6.4

Number of problem gamblers in England and Scotland

All aged 16 and over *2012*

Problem gambling measure	Problem gambler		
	Number in population	95% Confidence interval	
		Lower	Upper
DSM-IV	224,100	141,200	355,000
PGSI	180,200	107,000	303,000
Either DSM-IV or PGSI	280,000	108,900	413,000

6.5 Profile of problem gamblers

6.5.1 Introduction

A central reason for including gambling questions in the health surveys was to examine the profile of problem gamblers, to understand their characteristics and to learn more about what types of activities they participate in. In addition to this, the health surveys allow problem gambling to be examined according to several health-related dimensions, something not previously possible in the BGPS series. This section examines the profile of problem gamblers by a range of socio-demographic factors, health and lifestyle characteristics and type of gambling activity. It also examines problem gambling rates by the latent class groups identified in Chapter 4.

Inclusion of socio-demographic characteristics and health dimensions in the HSE and SHeS also enables multivariate analysis to be undertaken in order to ascertain the factors which were independently associated with problem gambling when interrelated variables were taken into account. The findings of this statistical modelling are presented in section 6.6. This analysis was undertaken for problem gambling according to **either** the DSM-IV or PGSI.

For clarity and brevity, this chapter focuses solely on problem gamblers as defined by **either** the DSM-IV or PGSI.

6.5.2 Problem gambling by socio-demographic characteristics

This section examines problem gambling prevalence (according to **either** the DSM-IV or PGSI) by various socio-demographic characteristics.

In 2012, problem gambling prevalence varied by marital status with significantly higher rates observed among those who were single (1.2%) than other groups. Estimates for those who were separated/divorced were 0.5%, married/living as married were 0.4% and widowed were 0.4%. This difference is likely to be associated with age as younger age groups had higher rates of problem gambling and single people are more likely to be younger. (This is tested by the regression modelling in section 6.6, where age is taken into account).

Those of White/White British ethnic origin had significantly lower problem gambling rates than other ethnic groups. 0.4% of White/White British people were classified as problem gamblers, whereas 2.5% of Black/Black British people, 2.4% of Asian/Asian British people and 2.2% of those from other ethnic backgrounds were problem gamblers.

People from a religion other than those categorised had significantly higher problem gambling rates than the more common religions (3.4%). Of the religions specified, problem gambling prevalence was highest among Muslims (0.8%) and lowest among Christians from a denomination other than Catholicism (0.3%).

Problem gambling prevalence also varied by NS-SEC[13] of the household reference person.[14] Rates were higher among those from routine and manual households (0.8%) and intermediate positions (0.6%) than those living in managerial and professional households (0.3%).

Finally, problem gambling prevalence was significantly higher among those who rented their home, either from a private landlord (1.0%) or from a council / housing association (0.9%). Prevalence was lowest among those who owned their property outright or were buying their property with a mortgage (0.3% and 0.5% respectively), although again this may be associated with age.

There was no discernible pattern between problem gambling prevalence and income, educational qualifications, the economic activity of the individual or the number of people residing in a household.

Table 6.5

Problem gambling prevalence (according to either DSM-IV or PGSI), by socio-demographic characteristics

All aged 16 and over *2012*

Socio-demographic characteristics		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
Sex				
Male	%	1.5	*3313*	*7034*
Female	%	0.3	*3721*	*3561*
Age group				
16-24	%	2.5	*605*	*877*
25-34	%	0.9	*1016*	*1234*
35-44	%	0.8	*1298*	*1272*
45-54	%	0.8	*1367*	*1260*
55-64	%	0.5	*1198*	*1044*
65-74	%	0.7	*1020*	*726*
75 and over	%	0.3	*530*	*467*
Marital status				
Married/living as married	%	0.4	*6926*	*6667*
Single, never married	%	1.2	*2105*	*2631*
Separated/divorced	%	0.5	*1066*	*960*
Widowed	%	0.4	*810*	*653*
Ethnic group				
White/White British	%	0.4	*10132*	*9728*
Black/Black British	%	2.5	*178*	*263*
Asian/Asian British	%	2.4	*452*	*709*
Mixed/Other	%	2.2	*136*	*202*
Religion				
No religion	%	0.5	*3626*	*3660*
Christian – Catholic	%	0.6	*1846*	*2064*
Christian – other denominations	%	0.3	*4787*	*4231*
Muslim	%	0.8	*240*	*393*
Any other religion	%	3.4	*329*	*453*
Qualifications				
Degree or higher (or equivalent)	%	0.4	*2905*	*2931*
Higher education below degree level	%	1.3	*1236*	*1220*
A-level or equivalent	%	0.3	*1698*	*1909*
GCSEs or equivalent	%	0.6	*2669*	*2661*
Other / No qualifications	%	0.6	*2385*	*2179*
NS-SEC of household reference person				
Managerial & professional	%	0.3	*4463*	*4545*
Intermediate	%	0.6	*2337*	*2415*
Routine & manual	%	0.8	*3857*	*3603*
Economic activity of individual				
Paid work	%	0.5	*5811*	*6147*
Unemployed	%	1.2	*545*	*716*
Full-time education	%	0.6	*439*	*600*
Retired	%	0.3	*2864*	*2299*
Other inactive	%	1.0	*1239*	*1138*
Household tenure				
Buying with a mortgage/loan	%	0.5	*3673*	*3865*
Own outright	%	0.3	*3702*	*3251*
Rent from private landlord	%	1.0	*1831*	*1683*
Rent from council / housing association	%	0.9	*1489*	*1922*
Other tenure	%	-	*198*	*175*

Table 6.5 (continued)

Problem gambling prevalence (according to either DSM-IV or PGSI), by socio-demographic characteristics

All aged 16 and over *2012*

Socio-demographic characteristics		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
Household composition				
Single person household	%	0.8	*2123*	*1797*
Two adults, no children	%	0.3	*4016*	*3590*
Small family	%	0.5	*2084*	*1926*
Large family	%	0.5	*655*	*685*
Large adult only household	%	0.9	*2028*	*2914*
Equivalised household income tertile				
1st (highest)	%	0.4	*1894*	*1949*
2nd	%	0.1	*1848*	*1761*
3rd	%	0.4	*1833*	*1754*
4th	%	0.7	*1843*	*1660*
5th (lowest)	%	0.6	*1789*	*1772*

6.5.3 Problem gambling by health and lifestyle characteristics

This section examines the prevalence of problem gambling according to **either** the DSM-IV or PGSI by a number of health and lifestyle factors. Based on the combined data of both health surveys, problem gambling rates varied only by cigarette smoking status, self-reported blood pressure status and measures of mental health and wellbeing.

Problem gambling prevalence was higher among current cigarette smokers (1.0%) than non-smokers (0.5%). However, problem gambling prevalence did not vary significantly by the number of cigarettes smoked, meaning that among those who smoke, prevalence rates did not vary based on levels of cigarette consumption.

The 12-item General Health Questionnaire (GHQ-12) [15] is a widely used and validated measure of mental ill health. Prevalence of problem gambling was higher among those with a higher GHQ-12 score and decreased the lower the score. 0.3% of those with a score of 0 (no evidence of mental ill health) were identified as problem gamblers, whereas 1.4% of those with a score of 4 or higher (probable mental ill health) were classified as such.

The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS)[16] was developed to capture a broad concept of positive mental wellbeing. Problem gambling prevalence was significantly higher among those with a low WEMWBS score (2.2%), than those who had a wellbeing score not considered to be low (0.3%).

Problem gambling prevalence rates did not vary by any measure of alcohol consumption, by general health status or presence of a longstanding illness. Weight and height measurements were

obtained from respondents, in order to calculate Body Mass Index (BMI). BMI relates to increased weight-for-height and is a frequently used measure of obesity and being overweight.[17] There was no significant variation in problem gambling prevalence rates by the BMI measurement of an individual. Problem gambling prevalence also did not vary significantly by self-reported blood pressure status (though this was at the margins of significance). Finally, participants were asked whether they had undertaken any physical activity in the past four weeks. Problem gambling prevalence rates did not vary between those who had participated in physical activity and those who had not.[18]

Table 6.6

Problem gambling prevalence (according to either DSM-IV or PGSI), by health and lifestyle characteristics

All aged 16 and over *2012*

Health and lifestyle characteristics		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
General health status				
Very good/good	%	0.5	*8115*	*8389*
Fair	%	0.9	*1955*	*1815*
Bad/very bad	%	0.9	*836*	*708*
Presence of a longstanding illness				
Limiting longstanding illness	%	0.8	*2930*	*2372*
Non-limiting longstanding illness	%	0.7	*1841*	*1799*
No longstanding illness	%	0.5	*6125*	*6728*
Cigarette smoking status				
Current cigarette smoker	%	1.0	*2213*	*2146*
Not a current cigarette smoker	%	0.5	*8663*	*8711*
Number of cigarettes smoked				
Light smoker (under 10 per day)	%	1.0	*692*	*762*
Moderate smoker (10 to 20 per day)	%	0.8	*962*	*901*
Heavy smoker (20 or more per day)	%	1.4	*527*	*465*
Non-smoker	%	0.5	*8667*	*8718*
Alcohol drinking status				
Current alcohol drinker	%	0.6	*9326*	*9330*
Not current alcohol drinker	%	0.7	*1555*	*1535*
Frequency of drinking alcohol				
Every day/almost every day	%	0.1	*1383*	*1408*
Three or four days a week	%	0.4	*1518*	*1592*
Once or twice a week	%	0.8	*3027*	*2956*
Once or twice a month	%	0.8	*1531*	*1506*
Less than once a month	%	0.5	*1762*	*1742*
Do not drink	%	0.7	*1653*	*1654*
Units of alcohol consumed by current drinkers on heaviest drinking day in past week				
Less than 4 units	%	0.3	*2527*	*2552*
4-7 units	%	0.4	*2023*	*1989*
8-11 units	%	0.8	*1011*	*1020*
12-15 units	%	1.4	*498*	*517*
16 units or more	%	1.0	*475*	*508*
Blood pressure status				
Has high blood pressure – takes medication	%	1.3	*907*	*819*
Has high blood pressure – does not currently take medication	%	0.5	*2008*	*1684*
Has never had high blood pressure	%	0.5	*7981*	*8395*

Table 6.6 (continued)

Problem gambling prevalence (according to either DSM-IV or PGSI) by health and lifestyle characteristics

All aged 16 and over *2012*

Health and lifestyle characteristics		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
BMI measurement				
Under 25	%	0.8	*3283*	*3651*
25 to less than 30	%	0.6	*3636*	*3528*
30 and over	%	0.4	*2624*	*2413*
GHQ-12 status				
Score 0	%	0.3	*6591*	*6506*
Score 1-3	%	0.7	*2458*	*2507*
Score 4+	%	1.4	*1595*	*1609*
Warwick-Edinburgh Mental Wellbeing score				
Low wellbeing score (lowest 10% of scores)	%	2.2	*865*	*646*
Other wellbeing score	%	0.3	*7408*	*6365*
Participation in physical activity in past four weeks				
Participated in physical activity	%	0.6	*4919*	*5372*
Did not participate in physical activity	%	0.5	*5990*	*5542*

6.5.4 Problem gambling prevalence by Latent Class Analysis group

This section examines the prevalence of problem gambling according to **either** the DSM-IV or PGSI by the Latent Class Analysis (LCA) grouping assigned in Chapter 4.[19] The LCA was conducted for both men and women separately. Therefore, there are no figures for all adults.

Among men problem gambling prevalence was highest among those in the multiple high group (25.0%) followed by those in the multiple group (3.3%) and then those in the moderate group (2.6%). Problem gambling prevalence was lowest among those in the National Lottery Draw only group (0.1%) followed by those in the minimal – lotteries and scratchcards group (0.7%).

Among women problem gambling prevalence was higher among those in the multiple group (1.8%) followed by those in the moderate – more varied group (0.6%). For other groups the estimates were too low to enable robust analysis. This typically reflects the low absolute number of female problem gamblers included in these studies.

Table 6.7

Problem gambling prevalence (according to either DSM-IV or PGSI) by group from Latent Class Analysis (LCA)

All aged 16 and over *2012*

LCA grouping		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
Men				
A Non-gamblers	%	-	*1539*	*1776*
B National Lottery Draw only	%	0.1	*1106*	*1089*
C Minimal – lotteries and scratchcards	%	0.7	*1018*	*1076*
D Minimal – no National Lottery Draw	%	1.2	*392*	*468*
E Moderate	%	2.6	*604*	*686*
F Multiple	%	3.3	*152*	*185*
G Multiple high	%	[25.0]	*41*	*57*
Women				
A Non-gamblers	%	-	*2336*	*2258*
B National Lottery Draw only	%	-	*1352*	*1133*
C National Lottery Draw and scratchcards only	%	-	*399*	*366*
D Minimal – no National Lottery Draw	%	0.3	*428*	*415*
E Moderate – less varied	%	-	*531*	*445*
F Moderate – more varied	%	0.6	*662*	*611*
G Multiple	%	1.8	*349*	*348*

6.5.5 Problem gambling prevalence by activity

This section presents information about the associations evident between problem gambling and participation in individual gambling activities. Exploring this relationship is complex and a number of considerations should be borne in mind when interpreting these results. These include:

1) The HSE and SHeS are cross-sectional surveys and whilst patterns or associations may be highlighted within the data, we cannot draw any inference about causal directions.

2) Gamblers are a heterogeneous group. Those who gamble frequently (at least once a month or more) tend to take part in a range of different activities. Therefore, it is important to recognise when looking at problem gambling prevalence by participation in individual activities that each gambling activity is not mutually exclusive.

3) Cross-tabulations show relationships between the dependent and independent variables, in this case, participation in certain gambling activities and problem gambling prevalence. If associations are observed, there is the possibility that some other factor may be influencing the results. For example, earlier in this chapter we noted that past year gambling prevalence was associated with marital status, but that this, in part, may also be a reflection of the relationship between age and gambling participation. Secondary analysis of the BGPS 2007 data demonstrated that frequency of participation or the number of gambling activities undertaken are associated with problem gambling

prevalence rates and that the relationship of these measures of gambling involvement with problem gambling needs to be further explored.[20] Examining these issues in detail is beyond the scope of this report. However, it is important to recognise this possibility and to bear this in mind when interpreting results.

Table 6.8 presents problem gambling prevalence rates for each activity undertaken in the past year. Problem gambling prevalence in England and Scotland was highest among those who had spread-bet[21] (20.9%). Following this, problem gambling prevalence rates were highest among those who had played poker in pubs or clubs (13.2%), bet on other events (12.9%), bet with a betting exchange[22] (10.6%) and played machines in bookmakers (7.2%).

The National Lottery Draw (0.9%) and scratchcards (1.7%) had the lowest problem gambling prevalence of all activities.

Table 6.8

Problem gambling prevalence (according to either DSM-IV or PGSI), by activity

All aged 16 and over *2012*

Gambling activity		**Problem gambler**		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
Lotteries and related products				
National Lottery Draw	%	0.9	*5911*	*5646*
Scratchcards	%	1.7	*2007*	*2128*
Other lotteries	%	1.8	*1622*	*1564*
Machines/games				
Football pools	%	4.0	*319*	*308*
Bingo (not online)	%	3.4	*669*	*606*
Slot machines	%	2.6	*677*	*799*
Machines in a bookmakers	%	7.2	*264*	*333*
Casino table games (not online)	%	6.0	*302*	*366*
Poker played in pubs or clubs	%	13.2	*109*	*148*
Online gambling on slots, casino or bingo games	%	6.3	*297*	*352*
Betting activities				
Online betting with a bookmaker	%	3.8	*497*	*560*
Betting exchange	%	10.6	*78*	*104*
Horse races (not online)	%	2.3	*1106*	*1141*
Dog races (not online)	%	4.2	*264*	*316*
Sports events (not online)	%	5.8	*484*	*532*
Other events (not online)	%	12.9	*121*	*124*
Spread-betting	%	20.9	*52*	*61*
Private betting	%	2.2	*437*	*595*
Other gambling activity				
Any other gambling	*%*	*9.8*	*150*	*173*
Any gambling (excluding National Lottery Draw only)	*%*	*1.3*	*4576*	*4657*
Any online gambling (excluding National Lottery)	*%*	*4.2*	*710*	*800*

6.5.6 Problem gambling prevalence by number of activities

Table 6.9 and Figure 6.4 show the prevalence of problem gambling by the number of gambling activities undertaken in the past 12 months.

Problem gambling prevalence was highest among those who had participated in seven or more activities in the past year (8.6%) and lowest among those who had taken part in just one activity (0.1%). As Figure 6.4 shows, problem gambling prevalence rates increased as the number of activities undertaken increased. Equally, analysis has also shown that, on average, problem gamblers took part in 6.6 activities in the past year, further demonstrating the diversity of behaviour among gamblers (see Figure 6.5). However, what this data does not show is how often someone participated in gambling, which is likely to be an even more pertinent measure of engagement. These questions were not included in the health survey series. Number of activities engaged in could be acting as a proxy for deeper engagement though we would caution against these results being taken too literally. People can still have problems with their gambling behaviour even if they only take part in one or two gambling activities per year. As Figure 6.5 shows, 7% of problem gamblers took part in one activity only. However, the average pattern is for problem gamblers to engage in a broader range of activities, with over one third of problem gamblers taking part in seven or more activities in the past year.

Figure 6.4

Problem gambling prevalence, by number of gambling activities

Base: All aged 16 and over

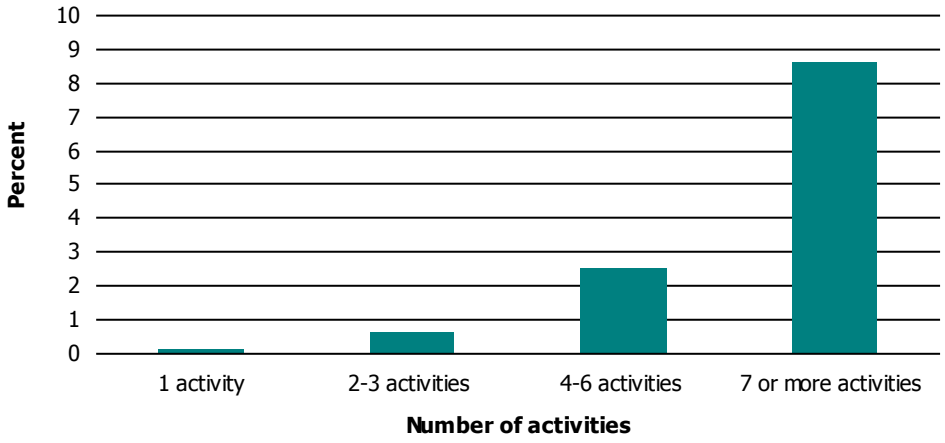


Figure 6.5

Number of gambling activities undertaken among problem gamblers

Base: All aged 16 and over

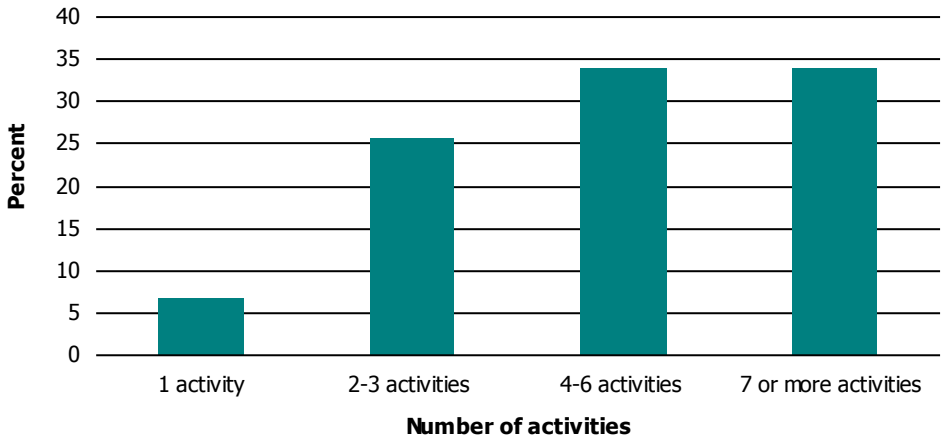


Table 6.9

Problem gambling prevalence (according to either DSM-IV or PGSI), by number of gambling activities

All aged 16 and over *2012*

Number of gambling activities		Problem gambler		
		Problem gambler according to **either** DSM-IV or PGSI	*Bases (unweighted)*	*Bases (weighted)*
All				
1 activity	%	0.1	*3153*	*2949*
2-3 activities	%	0.6	*2889*	*2819*
4-6 activities	%	2.5	*791*	*859*
7 or more activities	%	8.6	*201*	*252*

6.6 Factors associated with problem gambling

Multi-variate logistic regression was used to examine the factors associated with problem gambling according to either the DSM-IV or PGSI. The model examines the socio-demographic and health characteristics associated with being a problem gambler.

Due to the small number of respondents within the HSE and SHeS who were classified as problem gamblers, any statistical modelling using this group must be developed with caution. The resultant models can be quite unstable as we are modelling the characteristics of 64 people.

The data was subjected to several stages of examination during which different model combinations were tested to examine the impact of inclusion or exclusion of certain variables. The data presented in this section are the final model developed following this process (see Appendix A for details).[23]

The regression technique adjusts for several explanatory variables simultaneously. For each one, key variables of interest were entered into the model. These included key socio-demographic variables (age, sex, marital status, ethnic group, religion, NS-SEC of the household reference person, household income, educational qualifications, economic activity of respondent, household tenure) and key health variables (general health status, limiting longstanding illness, smoking status, drinking status, presence of high blood pressure, BMI, GHQ-12 status and WEMWBS score).[24]

Variables were tested for possible co-linearity and interaction in order to identify a set of variables that would perform well in the final model without distorting the analysis. Variables excluded for these reasons were GHQ-12 status and presence of a limiting longstanding illness. Both of these were highly correlated with other variables used: GHQ-12 status with WEMWBS score[25] and limiting longstanding illness with general health status.

For the model presented in Table 6.9, the independent variable was significantly associated with the outcome variable (problem gambling) if $p<0.05$. The odds associated with the outcome variable are presented for each category of the independent variable. Odds are expressed relative to a reference category, which is given a value of 1. An odds ratio greater than 1 indicates higher odds of problem gambling. An odds ratio of less than 1 indicates lower odds of problem gambling. 95% confidence intervals are also shown for each odds ratio. If the interval does not include 1, there is a significant difference between the odds ratio for the category and that of the reference category. Table 6.10 shows the odds of being classified as a problem gambler according to either the DSM-IV or PGSI. Only variables that were significant in the final model are shown in the table. The characteristics that were significantly associated with being a problem gambler were:[26]

- sex;
- ethnic group;
- blood pressure status;
- equivalised household income, and
- WEMWBS score.

The odds of being classified a problem gambler were 5.6 times higher among men than women. Relative to those who were White/White British, the odds of being a problem gambler were 7.4 times higher among those from Black/Black British ethnic groups, and were 5.0 times higher among those from Asian/Asian British groups. The odds of being a problem gambler were also higher among those from mixed or other ethnic groups, being 6.9 times higher relative to White/White British. These findings are somewhat remarkable as participation in gambling is higher among the White/White British ethnic group than any other group and lowest among those from an Asian/Asian British ethnic origin (see Chapter 2, section 2.4).

Relative to those who have never had high blood pressure, the odds of being a problem gambler were 3.1 times higher among those who have ever had high blood pressure. This means that problem gamblers were more likely to have had high blood pressure at some point than non-problem gamblers. The association between those who have high blood pressure but take medication and problem gambling was not significant.

Household income was associated with problem gambling status overall, though no specific income quintile varied significantly from the reference category of those with the highest income.

However, if the second highest income quintile was used as a reference category instead (not shown in table) the odds of being a problem gambler were seven times higher among those in lower (the 4th quintile) income groups.

A person's WEMWBS score was found to be highly associated with problem gambling, with the odds of being a problem gambler being 7.7 times higher among those with a low wellbeing score (those falling into the lowest 10% of scores) than those who did not fall into the bottom 10%.

Again, these findings are interesting given that participation was lower among those with a low wellbeing score (see Chapter 3).

Table 6.10

Estimated odds ratios for being classified a problem gambler according to either DSM-IV or PGSI, by associated risk factors and sex

All aged 16 and over with a valid DSM-IV or PGSI score *2012*

Socio-demographic and health characteristics	Odds Ratio	95% CI [a]		*n*
		Lower	Upper	
Sex (p<0.001)				
Female	1			*4852*
Male	5.61	2.61	12.04	*6057*
Ethnic group (p<0.001)				
White/White British	1			*10143*
Black/Black British	7.37	2.32	23.38	*178*
Asian/Asian British	5.02	1.85	13.60	*452*
Mixed/Other	6.86	1.52	31.01	*136*
Equivalised income quintiles (p=0.050)				
1st (highest)	1			*1848*
2nd	0.25	0.05	1.39	*1894*
3rd	0.97	0.25	3.79	*1833*
4th	1.78	0.53	5.96	*1843*
5th (lowest)	1.01	0.30	3.38	*1789*
Not answered	2.22	0.74	6.69	*1702*
Blood pressure status (p=0.015)				
Have never had high blood pressure	1			*7994*
Has had high blood pressure – does not current take medication	3.10	1.40	6.84	*907*
Has high blood pressure – takes medication	1.01	0.37	2.73	*2008*
Warwick-Edinburgh Mental Wellbeing score (p<0.001)				
Other wellbeing score	1			*7408*
Low wellbeing score (lowest 10% of scores)	7.65	2.87	20.42	*865*
Unknown wellbeing score	2.45	1.17	5.12	*2636*

[a] Confidence interval

Notes and references

[1] Lesieur, H.R., Rosenthal, M.D. (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 (1), 5-40.

[2] American Psychiatric Association (1993). *Diagnostic and statistical manual of mental disorders, 4th edition*. Washington DC: American Psychiatric Association.

[3] Ferris, J., Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*. Canada: The Canadian Centre on Substance Abuse.

[4] The HSE and SHeS were both planned and implemented prior to the formal publication of the DSM-V and therefore used the DSM-IV. This replicates the version used in the BGPS series.

[5] This is with the exception of the 'chasing losses' item which is rated on a scale ranging between 'never' to 'every time I lost'. See Appendix B for the full question wording.

[6] Fisher, S.E. (1996). *Gambling and problem gambling among casino patrons, Report to the British Casino Industry Consortium,* Plymouth UK; National Gambling Impact Study Commission (NGISC) (US) 1999. Final Report. http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html; Australian Productivity Commission (APC) (1999). Australia's Gambling Industries. Report No. 10, Canberra: Ausinfo.
Clarke D., Abbott M., Tse S., Townsend S. (2006). Gender, Age, Ethnic and Occupational Associations with Pathological Gambling in a New Zealand Urban Sample. New Zealand *Journal of Psychology*, 35(2), 84-91.

[7] Ferris, J., Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*. Canada: The Canadian Centre on Substance Abuse.

[8] Wynn, H. (2003). *Introducing the Canadian Problem Gambling Index*. Wynne Resources: Canada.

[9] More recently, some academics have recommended that a lower threshold be used to identify problem gamblers using the PGSI. However, this report maintains the original scoring so as to preserve comparisons with the BGPS series.

[10] Recent research conducted by Professor Corinne May-Chahal has estimated that problem gambling prevalence rates among the prison population may well be higher than the general population. See Scarfe, A. and Wilson, A. Addressing Problem Gambling in Prisons: Good Organisational Reasons for Programme Success and Failure. Presented at the 14th international Conference on gambling and risk. May 2008.

[11] The BGPS 2010 undertook some analysis on those respondents for whom it took more effort to persuade to take part in the study (i.e., they required multiple calls to contact, were reissued or followed-up by the telephone unit after the interviewer failed to either make contact or persuade them to participate). These people were more likely to be gamblers.

[12] Surveys involve interviewing a sample of people drawn from a population, with responses from that sample being generalised back to the wider population. It is possible that this process introduces random error into survey results because of differences in who is sampled (e.g., it is possible to randomly choose a sample which gambles more often than the population as a whole, by chance). Because of this, survey estimates are generally considered to exist within a range of values known as a 'confidence interval'. In this report, confidence intervals are presented at the 95% level, meaning that we can be 95% certain that the 'true' (and unmeasurable) population estimate lies within the range quoted.

[13] NS-SEC is a social classification system that attempts to classify groups on the basis of employment relations, based on characteristics such as career prospects, autonomy, mode of payment and period of notice. Participants are assigned to an NS-SEC category based on the current or former occupation of the

household reference person (see note 13 below). For a full explanation of NS-SEC and its derivation see *The National Statistics Socio-economic Classification User Manual 2002*, ONS, 2002.

[14] The household reference person (HRP) is defined as the householder (the person in whose name the property is owned or rented); if there is more than one, the person with the highest income. If there are two householders with equal income, then the household reference person is the oldest.

[15] A measure of mental ill health was included in both the HSE and SHeS in 2012. The GHQ-12 is a widely used and validated measure of mental health. It was originally intended for use in general practice settings as a screening instrument for general, non-psychotic psychiatric morbidity (probable mental ill health), and should not be used to diagnose specific psychiatric problems.[15] The GHQ-12 was administered via a self-completion booklet. The questionnaire concentrates on the broader components of psychological ill health and consists of 12 items measuring such characteristics as general levels of happiness, depression and self-confidence. Six questions are positively phrased and six questions negatively so. Each of the 12 items is rated on a four-point response scale to indicate whether symptoms of mental ill health are 'not at all present', present 'no more than usual', present 'rather more than usual' or present 'much more than usual'. The maximum score for any individual study participant is 12.

No formal threshold exists for identifying probable mental ill health, with optimal values likely to be specific to the population under study. However, in keeping with previous HSE and SHeS surveys, participants' scores are grouped according to three categories: 0 (indicating no evidence of probable mental ill health), 1-3 (indicating less than optimal mental health), and 4 or more (indicating probable psychological disturbance or mental ill health).

A threshold score of 4 was chosen as the suggested level for identifying 'cases' of mental illness, i.e. individuals with a possible psychiatric illness. Although this threshold is known to generate quite a high level of false positives (individuals who have a score of 4 and above but on psychiatric examination have no psychiatric illness), it was found to be the most suitable cut-off point for the purposes of the HSE and SHeS reports, providing large enough numbers for analysis. There is no universally used 'threshold' score for GHQ-12 because the populations it is used on vary considerably.

[16] A measure of subjective mental wellbeing was included in the survey. The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) was developed to capture a broad concept of positive mental wellbeing and incorporates both eudaimonic and hedonic perspectives on wellbeing. A eudaimonic perspective on wellbeing relates to people's functioning, social relationships, and perceptions of whether the things they do in life are meaningful or worthwhile. A hedonic perspective on wellbeing focuses on affect, and relates to experience of pleasure, happiness and the avoidance of pain. WEMWBS has 14 statements which cover psychological functioning, cognitive-evaluative dimensions and affective-emotional aspects of wellbeing. For each statement participants are asked to tick the box that best describes their experience over the previous two weeks. They can answer on a 5-point scale: 'None of the time', 'Rarely', 'Some of the time', 'Often', or 'All of the time'. The statements are all expressed positively – for example, 'I've been feeling optimistic about the future'. The responses, numbered 1 to 5, are aggregated to form the Wellbeing Index, which can range from 14 (those who answer 'Rarely' to every statement) to 70 (those who answer 'All of the time' to all statements). Having a low wellbeing score was defined as having a WEMWBS score in the lowest 10% of all scores (see HSE 2012. http://www.hscic.gov.uk/catalogue/PUB13218)

[17] In order to define 'overweight' or 'obesity', a measurement is required that allows for differences in weight due to height. A widely accepted measure of weight for height is the Body Mass Index (BMI), defined as weight in kilograms divided by the square of the height in metres (kg/m2). This has been used as a measure of obesity in the HSE series. Since 2011, BMI has been calculated both from valid interviewer-measured

height and weight, and from self-estimated height and weight. Adult participants were classified into the following BMI groups according to the World Health Organisation BMI classification.

BMI (kg/m^2)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 and over	Obese
40 and over	Morbidly obese

BMI categories of overweight and obese have frequently been combined to show the proportion who are either overweight or obese. For the purpose of this report the categories of obese and morbidly obese have been combined.

[18] Due to differences in the way levels of physical activity are measured in the HSE and SHeS, it was not possible to include any further analysis on physical activity and problem gambling in this study.

[19] See Chapter 3 for a full explanation of LCA and details of how this was calculated.

[20] LaPlante D.A., Nelson S.E., LaBrie, R.A., Shaffer, H.J. (2009). Disordered gambling, type of gambling and gambling involvement in the British Gambling Prevalence Survey 2007 *European Journal of Public Health* doi: 10.1093/eurpub/ckp177 and Vaughan Williams L., Page L., Parke J., Rigbye, J. (2008) *British Gambling Prevalence Survey 2007: secondary analysis.* Gambling Commission.

[21] These figures must be treated with some caution due to relatively low base sizes: Spread-betting unweighted base *(for problem gambler according to **either** DSM-IV or PGSI)*= 52.

[22] These figures must be treated with some caution due to relatively low base sizes: Betting Exchange unweighted base *(for problem gambler according to **either** DSM-IV or PGSI)*= 78.

[23] The authors will be pleased to provide further information about how the regression model was developed.

[24] See endnotes 12, 15 and 16 for an explanation of these measures.

[25] Co-linearity existed between the WEMWBS score and GHQ-12 status. This is most likely because they are both a measure of mental health, although they measure different things. GHQ-12 is a measure of mental ill health, whereas the WEMWBS score is a measure of mental wellbeing. For this reason, it was necessary to choose between the two measures and select only one for inclusion in the regression model. The WEMWBS score was the preferred choice because it measures mental wellbeing rather than ill health. Given that problem gambling is a recognised psychiatric disorder, a relationship between this and mental ill health is to be expected.

[26] Age was not significantly associated with being a problem gambler according to either the DSM-IV or the PGSI. This was surprising and the research team investigated this further. Models were constructed using age as a categorical variable and as a continuous variable but neither were significant. A categorical variable was the preferred method to use in the models as the relationship between age (as a continuous variable) and problem gambling was not linear. Age (as a categorical variable) was modelled as a predictor of problem gambling without other factors included and age alone did not significantly predict problem gambling. It is likely that this is due to the low number of problem gamblers within the survey dataset.

7 Key themes

7.1 Past year gambling behaviour

7.1.1 Past year gambling prevalence

This report has highlighted a number of key themes. Firstly, that gambling is and remains a majority pursuit. Nearly two thirds of the adult population in England and Scotland had gambled in the past year. As previous studies have shown, the National Lottery Draw is the most popular form of gambling activity, with over half of all English and Scottish adults buying a lottery ticket at least once in the past year. On average, men and women who gamble tend to take part in just one or two activities, but as Chapter 4 has shown these averages belie a much broader spectrum of gambling behaviour among both men and women. This ranges from people who only play the National Lottery to those who participate in many different types of activities. Recognising this diversity is important.

Many of the results presented in this report are consistent with findings from other studies, such as the British Gambling Prevalence Survey (BGPS) series, the Taking Part study (2005-2008) and the Adult Psychiatric Morbidity Survey 2007. For example, men are more likely both to engage with gambling and have a wider gambling repertoire than women; those from non-White ethnic backgrounds are less likely to gamble than their White/White British counterparts and men are more likely to experience difficulties as result of their gambling behaviour than women.

One of the advantages of including gambling questions within a health survey is the opportunity to assess gambling behaviour against a broader range of health and lifestyle factors. This report has highlighted some interesting new findings relating to this. It is clear that both physical and mental health are related to gambling behaviour. Chapters 3 and 4 have demonstrated how factors like blood pressure status, Body Mass Index (BMI) and mental ill-health (as measured by the 12-item General Health Questionnaire (GHQ-12)) are associated with being a certain type of gambler. In particular, Chapter 4 showed that raised blood pressure and elevated BMI levels were associated with multiple interest gambling among women but not among men. Among men, factors such as having a GHQ-12 score or 4 or more (indicating probable psychological ill-health) was positively associated with the highest levels of engagement in gambling activities. The BGPS series only included very broad self-reported questions about general health and this new analysis demonstrates further links between gambling and a range of physical and mental health related issues, even if it raises more questions than it answers.

This report also shows that gambling behaviour is heterogeneous and that different people take part in gambling to differing extents. Unfortunately, information about how frequently a person gambled was not available. Therefore, the number of activities a person undertook in the past year was taken as proxy for higher levels of gambling engagement. What this actually represents is breadth of involvement across a range of products; different gambling groups would likely be identified if depth of involvement was also considered.[1] This is important, as understanding more

about how gambling behaviour varies, for whom and under what circumstances, has potentially significant implications for education, prevention and treatment of gambling-related harm. Different people are likely to engage in gambling in a range of different ways which may affect their propensity to experience problems. This needs to be better explored so that the fuller range of gambling behaviour can be documented. The Latent Class Analysis presented within this report represents a move towards this but is also constrained by the questions asked. Nonetheless, it does provide useful information about how gambling behaviour varies and who is more likely to be a certain type of gambler.

Analysis of the factors associated with membership of different gambling groups showed that there is a wide range of factors associated with gambling behaviour. These factors range from individual characteristics (such as ethnicity or religious status) to health and lifestyle factors (such as cigarette and alcohol consumption) to household and regional level factors (such as household income, socio-economic status or region). What this suggests is that gambling behaviour has a range of social determinants and this range includes both the individual and the broader environment in which they live (largely measured in this report at the level of the household). When seeking to understand gambling behaviour, this full range of influences should be recognised – gambling may well be an individual behaviour but it is likely to be shaped both by the individual and their broad social and economic context.

In this report, the only area level analysis presented was Government Office Region. Other area level factors, like area deprivation, were not included because there is no standardised measurement of area deprivation which covers both England and Scotland.[2] However, evidence from the BGPS series and the individual health surveys' reports has shown that gambling behaviour, in particular problem gambling behaviour, does vary by some measures of deprivation. For example, the Scottish Health Survey (SHeS) showed that whilst past year rates of gambling did not vary by Scottish Index of Deprivation, the odds of being a problem gambler were 6.9 times higher among those living in the most deprived areas compared with the least deprived areas. This means that people living in deprived areas are just as likely to gamble overall as those in less deprived areas but are more likely to experience problems. A similar pattern was evident in the Health Survey for England (HSE), when looking at a slightly different measure of deprivation: Spearhead Primary Care Trusts (PCTs). Spearhead PCTs represent the most health deprived areas in England and, like area deprivation in Scotland, past year rates of gambling were similar between Non-Spearhead and Spearhead PCTs.[3] However, the odds of being a problem gambler were 1.9 times higher among those living in Spearhead PCTs. Whilst this is a different measure of deprivation (in the HSE area deprivation was not related to problem gambling) it demonstrates that the kinds of areas in which people live can be associated with gambling behaviour and that this needs further exploration.

Finally, this report has highlighted some important additional features relating to long-known associations. For example, in the BGPS series it is well documented that those from non-White ethnic groups are less likely to gamble, particularly those from Asian/Asian British backgrounds. A common assumption is that this difference is explained by the higher proportion of individuals from Islamic religious cultures present among Asian groups, as Islam prohibits gambling. This report is the first in England and Scotland to analyse gambling behaviour by religious affiliation. This analysis does show that Muslims are less likely to gamble than other groups. What is particularly interesting is that when both religion and ethnicity were included in regression models to explain non-gambling

behaviour, both remained significant. This means that even when religion was taken into account, ethnicity was a significant predictor of gambling behaviour. This suggests that whilst religion is important, there are other practices and explanations driving the association between non-gambling and ethnic origin. These could include other cultural practices or perceptions that influence propensity to gamble among other ethnic groups. This analysis helps to highlight this broader range of potential associations and suggests an area for further investigation among those interested in this determinant of gambling.

7.1.2 Problem and at-risk gambling

Whilst this report has highlighted that a range of gambling behaviour exists and has examined this on a continuum of engagement, it is also evident that gambling problems lie on a continuum ranging from non-problematic to problematic play. This report has provided information about this continuum by presenting information examining the range and profile of both problem gamblers and also those at risk of harm. Overall, the prevalence of problem gambling varied between 0.4% and 0.6% of the population, depending on the definition used. When those 'at risk' of experiencing gambling problems were included, the proportion experiencing some type of difficulty with their gambling behaviour increased by a further 4%. Figures 7.1 and 7.2 show the variation among male and female gamblers in respect of at-risk and problem gambling by age. A distinct pattern is evident for both men and women, whereby gamblers who are younger were more likely to report experiencing some type of difficulty with their gambling behaviour (a PGSI score of 1 or more) than those who were older. The pattern among men is most marked as one in four (27%) male gamblers aged 16-24 had a PGSI score of 1 or more. Among women of the same age, one in ten (10%) had an equivalent score.

This highlights the need to apply a public health perspective when considering gambling behaviour. A public health perspective encourages focus on the full distribution of gambling behaviour rather than focusing solely on those at the most severe end of the spectrum. The most harm at a population level is likely to be attributable to those who score below the threshold for problem gambling simply because there are more of them than problem gamblers. For example, this report estimates that there are anywhere between 180,200 (according to the PGSI) and 279,600 (according to both screens) problem gamblers in England and Scotland. However, this report also estimates that a further two million adults in England and Scotland are at-risk gamblers. This group should therefore be the focus of harm-prevention, and education initiatives more generally. This resonates with the call made by the Responsible Gambling Strategy Board for policy and strategy to focus more broadly on gambling-related harm whereby gambling-related harm is defined as 'the adverse financial, personal and social consequences to players, their families and wider social networks that can be caused by uncontrolled gambling'.[4] In short, looking at problem gambling alone is not enough, a broader perspective looking at the individual, their family and networks and a wider range of harms is needed.

Figure 7.1

PGSI scores among male past year gamblers

Base: Men aged 16 and over

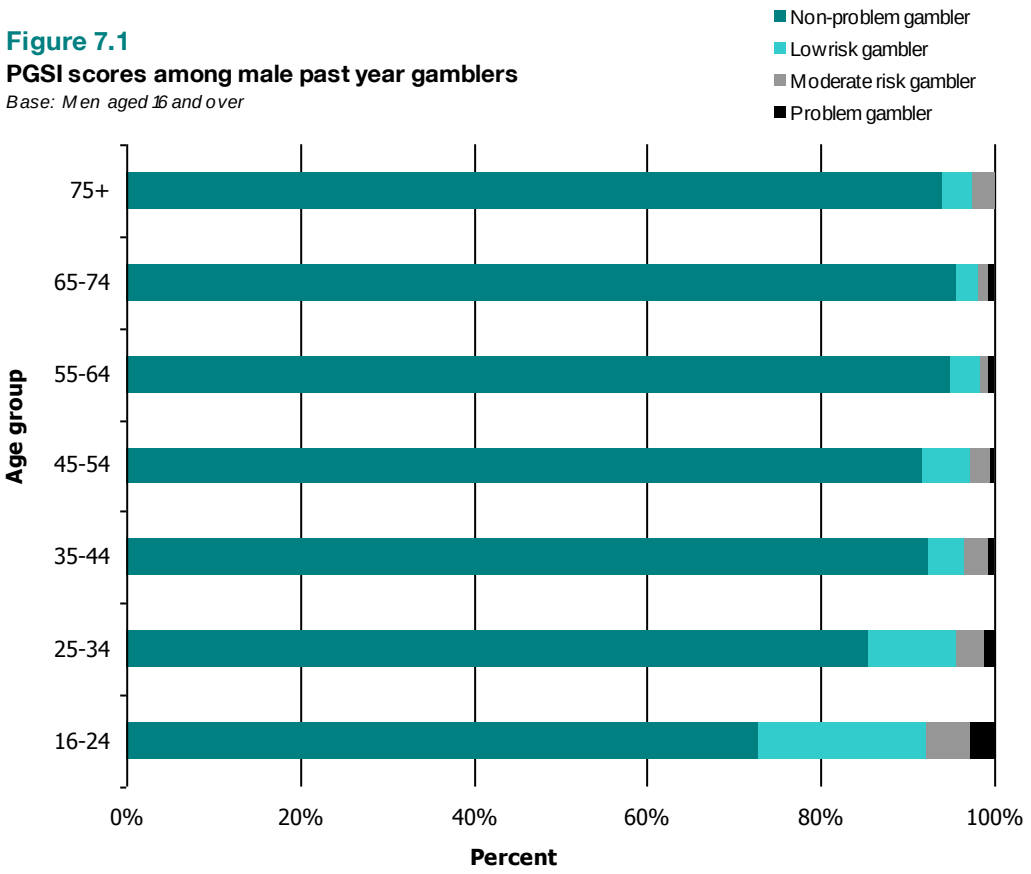
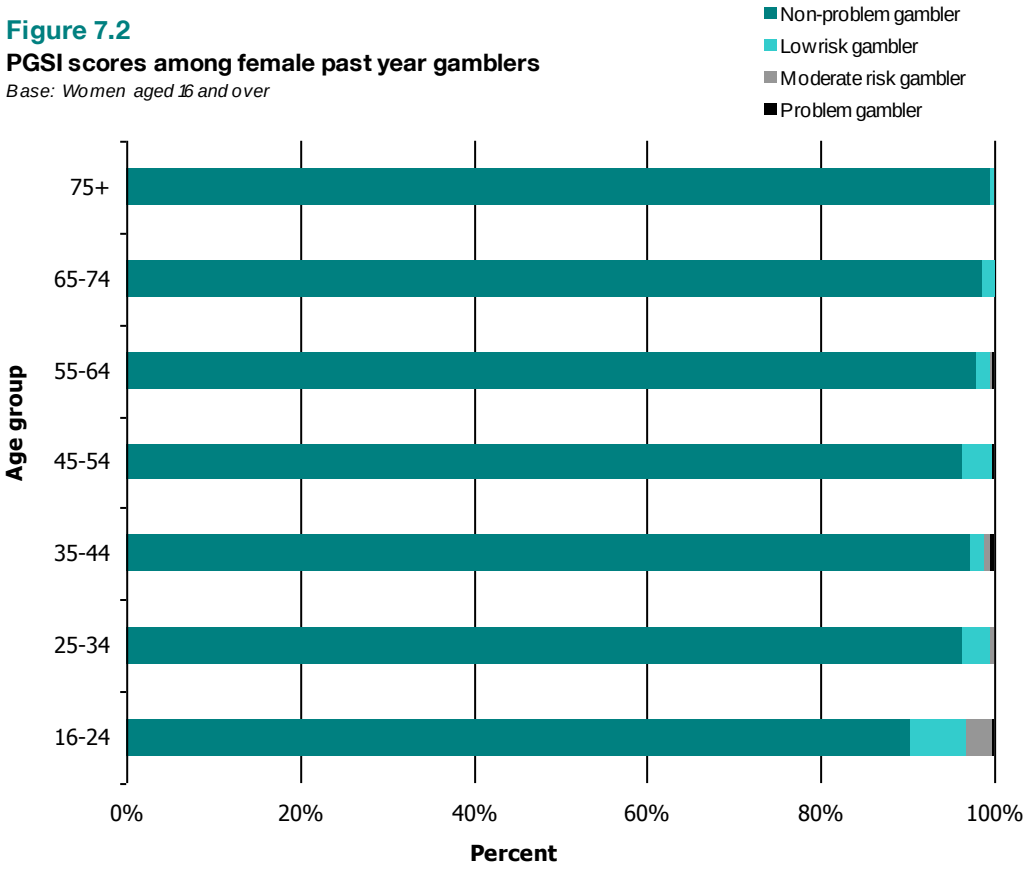


Figure 7.2

PGSI scores among female past year gamblers

Base: Women aged 16 and over



As with past year gambling prevalence, many of the factors associated with problem or at-risk gambling have been documented in other studies. Men are more likely than women to experience problems and as can be seen from Figures 7.1 and 7.2, this is also true among younger adults.

This report does highlight a number of new associations that have not previously been explored in a UK context. For example, mental wellbeing, as measured by the Warwick-Edinburgh Mental Wellbeing Scale was associated with both problem gambling and low-risk gambling. In both cases, the odds of being a problem gambler or low risk gambler were higher among those with lower levels of mental wellbeing. Equally, problem gambling was also associated with blood pressure status, with those who either currently have or have ever had high blood pressure being more likely to be problem gamblers. What this demonstrates is the strong association between problem gambling and both physical and mental wellbeing and health. This provides a further strong argument for treating gambling as a public health issue and corresponds to information provided by treatment providers about the adverse health outcomes associated with problem gambling.

Finally, this report also highlighted a new and interesting finding relating to those of Black/Black British origin. In this report, those from Black/Black British backgrounds had the highest odds of problem gambling, being seven times more likely to be problem gamblers than their White/White British counterparts. This is the first time in any British survey of gambling that this has been observed. In fact, variations in gambling behaviour by ethnicity (in Britain at least) have tended to focus on differences between Asian populations and White/White British adults. In part, this is an artefact of the sample size of the BGPS series. After White/White British respondents those from Asian/Asian British groups are the next largest, meaning that there are more cases to analyse and therefore more (statistical) power to detect differences. The combined health survey datasets provide the largest sample size to date for the analysis of gambling behaviour and therefore make it more likely that differences between groups can be detected. The health surveys data also show that those from Black/Black British groups were less likely than their White counterparts to gamble overall, yet their odds of being a problem gambler were seven times higher than this group and their problem gambling prevalence rates were 2.5%. Like those from Asian backgrounds, it seems that this group are less likely to gamble but those that do are more likely to experience problems. This is the first time that those from Black/Black British backgrounds have emerged so clearly as a group at potential risk of harm from gambling.

7.2 Gambling behaviour over time

As the introduction to this report noted, up until 2010 the main method of examining trends in gambling behaviour was via the BGPS. When this study was discontinued, the decision was made to measure headline rates of gambling participation and problem gambling rates using various national health surveys. These questions were secured in the English and Scottish health surveys but not the Welsh equivalent. This means that information about gambling behaviour for the whole of Great Britain is no longer available and as such this report only covers England and Scotland. However, the BGPS series has shown that gambling behaviour in Wales was similar to the rest of Britain and there is little reason to expect that this would be different in 2012.[5]

The inclusion of questions in the health survey was designed to be as comparable as possible with the former BGPS series. Indeed, these surveys were chosen largely because their survey methodology was very similar to that used by the BGPS. However, the data presented in this report should not be seen as an extension of the BGPS series. Whilst the methods are very similar, the survey vehicles are not and this could affect comparability of estimates between the two surveys.

For example, it is widely acknowledged that different survey vehicles can generate different estimates using the same measures, because they can appeal to different types of people, with varying patterns of behaviour. An experiment conducted in Canada showed that gambling screens included within health surveys typically generate lower rates of problem gambling than gambling-specific studies.[6] The authors of this report argued this is because non-gamblers are more likely to take part in studies presented as health surveys whereas gamblers are more likely to take part in gambling studies, thus affecting resultant gambling prevalence rates. Furthermore, examination of non-responders to the HSE series has also demonstrated that those experiencing poorer health are less likely to take part in a health survey.[7] [8] It is well documented that problem gamblers experience an array of adverse health outcomes. Therefore it is also possible that they are less likely to take part in a survey aimed at understanding health and health behaviour which could also affect prevalence rates documented. Finally, the gambling questions in the health survey came towards the end of a long household interview (typically lasting over one hour). A higher level of non-response to the gambling questions, and the problem gambling questions specifically, was observed in each respective health survey than in the BGPS series. Whilst data have been calibrated to match the age, sex and regional distribution of each respective population to adjust for this, this does not mean that all potential biases have been accounted for.

These differences between the two studies may affect our ability to compare changes over time. In short, any differences observed could be because of real changes at the population level or because the survey vehicle for collecting information has changed, or could be a combination of both.

Despite this, it is inevitable that some stakeholders will want to know if gambling behaviour has changed and they will seek to compare the results presented in this report with those published by the earlier BGPS series.[9] In the sections that follow, a brief overview is presented that should be considered alongside the caveats noted above.

Overall, the rates of past year gambling reported in the combined health survey series are typically lower than those reported in the BGPS series. This report showed that 65% of adults had gambled in the past year, whereas estimates from the BPGS series ranged from 72% in 1999 to 68% in 2007 to 73% in 2010. This pattern was the same for nearly all individual gambling activities. For example, the prevalence of buying National Lottery tickets was lower (52%) in the combined health surveys data and fluctuated between 57% in 2007 and 65% in 1999 in the BGPS series. There were a couple of exceptions to this. Firstly, rates of online betting with a bookmaker were higher in the combined health survey data than in the BGPS series. Estimates were 4% in 2007, 3% in 2010 and 5% in this report. This is surprising given the general pattern for the health surveys data to report lower prevalence estimates across most other activities. It suggests that despite differences in survey vehicles there may have been a real increase in online betting activity. For playing machines in a bookmakers, using betting exchanges and spread-betting, all had prevalence estimates which were very similar across both the BGPS series and the combined health survey

data. For example, 3% of adults had played machines in bookmakers in 2007 and 3% had played these machines in 2012. Given the overall pattern of lower prevalence rates between the two survey vehicles this too may suggest an actual increase in prevalence, as one would expect these rates to be lower in the health survey series.

These patterns were broadly similar for both men and women. One key difference was that the higher rates on online betting with a bookmaker were attributed solely to men. For men, rates increased from 6% in 2007 to 8% in the HSE/SHeS data. Among women, rates were similar and fluctuated between 1%–2% in each survey year.

Looking at problem gambling prevalence requires some further considerations to be taken into account. The absolute number of problem gamblers identified in any one survey is small – to date tending to be around 60 people or less (varying with overall sample size). This means that detecting statistically significant difference between survey years requires very large sample sizes.[10] This estimate can also be disproportionately affected by other sample biases (such as changes in survey vehicles). Finally, as noted in Chapter 4, the figures reported in this survey and in that of the BGPS series are our best estimate of problem gambling and should always be considered relative to the confidence interval surrounding the estimate. These caveats need to be borne in mind when comparing problem gambling rates from any survey.

Comparison of the problem gambling estimates according to the DSM-IV and the PGSI individually for the BGPS series and the combined health survey data did not show any statistically significant differences. For the DSM-IV, estimates varied from 0.6% in both 1999 and 2007 to 0.9% in 2010 to 0.5% in this report. These differences were not statistically significant. The same was true when comparing problem gambling estimates for the PGSI, where rates were 0.6% in 2007, 0.8% in 2010 and 0.4% in the combined health survey series. This too was not statistically significant.

However, this report has used a further measure of problem gambling prevalence: whether people were a problem gambler according to either the PGSI or the DSM-IV. Here a difference between the surveys was observed. Estimates ranged between 0.8% in 2007 to 1.2% in 2010 and 0.6% in the combined health survey data. This means that rates were higher in 2010 than in 2007 and the HSE/SHeS, where estimates were broadly similar.

Overall, based on this evidence, it appears that problem gambling rates in England and Scotland are broadly stable. Whilst problem gambling rates according to either the DSM-IV or the PGSI were higher in 2010, the estimate between 2007 and the health surveys data were similar. Likewise, problem gambling rates according to the DSM-IV and the PGSI individually did not vary statistically between surveys, meaning that they were relatively similar.

Notes and references

[1] Laplante, D.A., Nelson, S.E., Gray, H.M. (2013) Breadth and Depth Involvement: Understanding Internet Gambling Involvement and its Relationship to Gambling Problems. *Psychology of Addictive Behaviors*. [Epub ahead of print].

[2] England and Scotland have different measures of deprivation calculated over different geographies. Therefore, there is no standardised measurement for the two regions combined. The Office for National Statistics does not recommend that data from these two indices be combined stating that : "each nation has developed a distinct Index of Multiple Deprivation, designed to identify small area concentrations of multiple deprivation as best as possible within that nation. As a result there is no single index of multiple deprivation that spans the UK and nor is it possible to combine the four individual indices". Office for National Statistics (2013) *Using Indices of Multiple Deprivation in the UK: Guidance paper*, Newport: ONS.

[3] This analysis was not included in the main HSE report but has been produced for this report. After adjusting estimates to take into account the different age profiles of the PCTs, 63% of those living in Non-Spearhead PCTs and 66% of those living in Spearhead PCTs had gambled in the past year. The difference was not statistically significant.

[4] Responsible Gambling Strategy Board (2012) *Strategy*. Available at: http://www.rgsb.org.uk/publications.html.

[5] In the BGPS 2010, past year gambling prevalence was 75% in Wales and 73% for England and Scotland combined. Problem gambling prevalence rates were 1% (according to the DSM-IV) for Wales and 0.9% for England and Scotland. Using the PGSI, equivalent estimates were 0.7% (Wales) and 0.7% (England and Scotland). None of these differences were statistically significant.

[6] Williams, R.J., Volberg, R.A. (2009) Impact of survey description, administration format, and exclusionary criteria on population prevalence rates of problem gambling. *International Gambling Studies*, 9: 101-117.

[7] Gibson, A., Hewson, P., Asthana, S. *Modelling the nature, scale and consequences of health-related non-response bias in Health Survey for England data.* Paper presented at the UK Data Service's Health Survey User meeting 2013. http://ukdataservice.ac.uk/media/262808/healthusermeeting_gibson_11july13.pdf

[8] Gorman, E. *Exploiting record linkage to quantify non-response bias and improve population estimates in health surveys*. Paper presented at the UK Data Service's Health Survey User meeting 2013. http://ukdataservice.ac.uk/media/263014/healthusermeeting_gorman_11july13.pdf

[9] In this section all BGPS analyses have been reproduced to provide comparable estimates for England and Scotland only.

[10] These issues are fully discussed in the BGPS 2010 report, see Chapter 5: Wardle, H., et al (2011) *British Gambling Prevalence Survey 2010,* Birmingham: Gambling Commission.

Appendix A. Methodology

Introduction

Following a comprehensive review and public consultation in 2010 on the way in which gambling prevalence data was gathered and used, the decision was made to discontinue the British Gambling Prevalence Survey (BGPS). Instead the recommendation was made to include a module of questions on gambling participation and problem gambling in both the Health Survey for England (HSE) 2012 and the Scottish Health Survey (SHeS) 2012. This module covered participation in gambling activities in the past 12 months and problem gambling screens. Because of limits of questionnaire space, no further questions about gambling were included.

As with previous BGPS series, questions were asked using a confidential self-completion format. This was to encourage more honest reporting of a (potentially) sensitive activity and to ensure maximum comparability with the BGPS.

This chapter provides a descriptive summary of the survey methodology used on the HSE 2012 and the SHeS 2012 and of the analysis methods used in this report, including accounts of:

- questionnaire development;
- topic coverage;
- sample design;
- data collection procedures;
- survey response;
- data processing and management;
- weighting strategies;
- development, scoring and analysis of specific survey instruments;
- data analysis and reporting.

Questions used

Gambling participation in the past year

Questions about gambling behaviour were included for the first time in the HSE 2012 and SHeS 2012. This was with the aim of providing some continued measurement of gambling behaviour in these jurisdictions and aimed to explore the health correlates of gambling behaviour further than previously allowed by the BGPS series.

The questions and procedures used to collect information about gambling behaviour were the same in both health surveys. All adult participants (aged 16 and over) were asked to report whether they had spent any money on 19 different forms of gambling activity in the past 12 months. The activities ranged from buying tickets for the National Lottery Draw to online betting and gaming. The range of activities presented reflected all forms of commercial gambling currently available in

England and Scotland respectively and also included betting or gambling privately with family or friends, to capture informal gambling activity.

In both surveys, the list of gambling activities and descriptions presented to participants reflected those used in the BGPS 2007 as closely as possible. The BGPS 2007 was used as a model for developing the health surveys gambling model as this study also collected data using a paper self-completion booklet; in BGPS 2010, information was gathered using computer-assisted self-completion methods, allowing more a complex questionnaire structure to be developed.[1] The 2007 activity listing was updated to include 'playing poker in pub or club' and 'betting on sports events' (like football), reflecting the growing popularity of these activities since the 2007 study.

Everyone who had gambled at least once in the past year was also asked to complete two screening instruments to identify problem or risky gambling behaviour. Unlike the BGPS 2010, neither the HSE nor the SHeS included questions about frequency of gambling. Therefore, this report includes measures of breadth of gambling engagement (as measured by the number of activities undertaken) but not depth of gambling engagement (as measured by gambling frequency).[2]

Problem gambling definition and measurement

Problem gambling is commonly accepted to involve 'gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits'.[3] However, there is no universally accepted definition of problem gambling and many different instruments or 'screens' exist to identify and measure it (with over 20 different types in existence).[4] To date, there is no agreed 'gold standard' instrument recommended for use in population surveys.

Because of this, it has been common practice (in Britain at least) to include two different screening instruments in population-based surveys of gambling behaviour. As the instruments tend to capture different types of people using two different 'screens' they give a better reflection of the range of issues associated with problematic gambling. The first of these instruments is based on the Diagnostic and Statistic Manual-IV (DSM-IV). The second, the Problem Gambling Severity Index (PGSI),[5] was developed in Canada specifically for use in population based studies. Both instruments have been widely used internationally and were the instruments of choice for the 2007 and 2010 BGPS. The HSE and SHeS 2012 included both the DSM-IV and the PGSI.

The DSM-IV

The DSM-IV screening instrument contains ten diagnostic criteria ranging from 'chasing losses' (described to participants as '[when you] go back another day to win back money you lost') to committing a crime to fund gambling.[6] Each DSM-IV item is assessed on a four-point scale, ranging from 'never' to 'very often.'[7] Responses to each item are dichotomised (that is, given a score of 0 or 1) to show whether a person meets the criteria or not. A total score between 0 and 10 is possible.

A threshold of meeting at least three of the DSM-IV criteria is used to define problem gambling. This cut-off point has been found to give good discrimination between criterion groups and has provided the closest match to prevalence estimated by other screening instruments.[8] Clinicians currently use an additional threshold of a DSM-IV score of 5 or more to represent pathological gambling.5 For a variety of reasons, this threshold is not presented in this chapter. Firstly, the number of people falling into this category would be too small to allow any detailed analysis to be

carried out. Secondly, the term 'problem gambling' is preferred as it has less negative and medicalised conceptual issues associated with it than the term 'pathological gambling'. Finally, it appears likely that the label 'pathological gambling' will become obsolete as it has been renamed 'gambling disorder' in the recent publication of the DSM-V.[9] The threshold and scoring criteria used to identify problem gamblers in this study are the same as those used in the BGPS series.

The PGSI

The PGSI was developed for use among the general population rather than within a clinical context and was tested and validated within a general population survey. The instrument consists of nine items ranging from chasing losses to gambling causing health problems and feeling guilty about gambling. Each item is assessed on a four-point scale: never, sometimes, most of the time, almost always. Responses to each item are given the following scores:

Never	0
Sometimes	1
Most of the time	2
Almost always	3

Scores for each item are summed to give a total score ranging from 0 to 27. A score of 8 or more on the PGSI represents problem gambling. This is the threshold recommended by the developers of the PGSI and the threshold used in this report. The PGSI was also developed to give further information on sub-threshold problem gamblers. PGSI scores between 3 and 7 are indicative of 'moderate risk' gambling and scores of 1 or 2 are indicative of 'low risk' gambling.[10] As with the DSM-IV, the PGSI thresholds and scoring mechanisms used in the health surveys are the same as those used in the BGPS.

Mode of questionnaire administration

As with the BGPS series, questions were asked using a confidential self-completion format. This was to encourage more honest reporting of a (potentially) sensitive activity and to ensure maximum comparability with the BGPS.

Overview of Health Survey for England and Scottish Health Survey

The HSE

The HSE is part of a programme of surveys currently commissioned by the Health and Social Care Information Centre (HSCIC), and before April 2005 commissioned by the Department of Health. The HSE is an annual survey that collects information about the health and health-related behaviours of the public in England and helps to ensure that policies are informed by these data. The survey also helps monitor progress towards selected health targets.

The HSE 2012 was the 22nd in the series. All surveys in the series collected information from the adult population aged 16 and over living in private households in England. The survey gathers a wealth of information including socio-demographic variables and objective measures of health such as height, weight and blood pressure, plus modules of questions that vary annually. This means that it is possible to look at how people's health is related to their characteristics and circumstances.

The SHeS

The SHeS 2012 was the eighth Scottish Health Survey and the fifth report published since the survey moved to a continuous design in 2008. The series is commissioned by the Scottish Government Health Directorates to provide regular information that cannot be obtained from other sources on a range of aspects concerning the public's health, and many factors related to health.

The SHeS provides a detailed picture of the health of the Scottish population in private households and is designed to make a major contribution to the monitoring of health in Scotland. It is essential for the Scottish Government's forward planning, for identifying gaps in health services provision and for identifying which groups are at particular risk of future ill-health.

Each survey in the series includes socio-demographic information, core questions and measurements (height and weight and, if applicable, blood pressure, waist circumference, urine and saliva samples), plus modules of questions on specific health conditions that vary biennially.

Topic coverage

The topics included in each individual health survey vary. For this report, a listing was developed of all topics included in both studies in 2012. This is shown in Figure A1 below.

Figure A1 Topic coverage
Socio-demographic
Age and sex
Ethnic group
Religious affiliation
Highest educational qualification
Marital status
Economic activity of individual
NS-SEC of household reference person
Tenure
Household composition
Government Office Region
Health & lifestyle behaviours
General health status
Limiting longstanding illness
Blood pressure status
Body Mass Index status
GHQ-12 status
Warwick-Edinburgh Mental Wellbeing Score
Smoking status
Alcohol consumption
Physical activity status
Gambling module
Past year participation
DSM-IV
Problem Gambling Screen (PGSI)

The specific gambling activities asked about in each survey are listed below:

Figure A2 Gambling activities
Self-completion HSE and SHeS
National Lottery Draw
Scratchcards
Other lotteries
Bingo in person (not online)
Football pools
Betting on horse races with a bookmaker (not online)
Betting on dog races with a bookmaker (not online)
Betting on sports events with a bookmaker (not online)
Betting on other events with a bookmaker (not online)
Online gambling like playing poker, bingo, instant win/scratchcard games, slot machine style games or casino games for money
Online betting with a bookmaker
Using a betting exchange
Spread-betting
Fruit machines/slot machines
Poker in a pub tournament
Machines in a bookmakers to bet on virtual roulette, poker, blackjack or other games
Casino table games in person (not online)
Private betting with friends or colleagues
Other gambling activities

Sample design of each health survey

In the sections that follow, a brief overview of the sample design for each health survey is provided. Full technical details can be found in the respective health survey's technical reports.1

Overview of the HSE sample design

Sample frame

The sample for the HSE 2012 was designed to be representative of the population living in private households in England. A random sample of 9,024 addresses was selected in 564 postcode sectors. Like previous surveys in the HSE series, the 2012 survey adopted a multi-stage stratified probability sampling design.

The sampling frame was the small user Postcode Address File (PAF). The PAF is a list of nearly all residential addresses and is maintained by The Royal Mail. The population surveyed in the HSE was therefore people living in private households in England. The small proportion of households living at addresses not on the PAF (less than 1%) was not covered. Those living in institutions were outside the scope of the survey: this should be borne in mind when considering survey findings since the institutional population is likely to be older and, on average, less healthy than those living in private households.

Selecting sampling units

The sample for the HSE was drawn in two stages. At the first stage, a random sample of primary sampling units (PSUs), based on postcode sectors, was selected. Within each selected PSU, a random sample of postal addresses (known as 'delivery points') was then drawn.

Postcode sectors with fewer than 500 PAF addresses were combined with neighbouring sectors to form the PSUs. This was done to prevent the addresses being too clustered within a PSU. To maximise the precision of the sample, it was selected using a method called 'stratified sampling'. The list of PSUs in England was sorted by Strategic Health Authority (SHA) and, within each SHA, by Local Authority ordered by the percentage of adults in the 2001 Census from NS-SEC groups 1 and 2. PSUs in smaller SHAs (the North East, South East Coast and South Central) were over-sampled to provide a minimum sample size (of approximately 700 adults). To obtain the stratified sample, the PSUs were selected by sampling from the sorted list at fixed intervals (although different fixed intervals for the smaller SHAs) from a random starting point. 564 PSUs were selected with probability proportional to the total number of addresses within them. Selecting PSUs with probability proportional to number of addresses and sampling a fixed number of addresses in each ensures that an efficient (equal probability) sample of addresses is obtained. Once selected, the PSUs in each group were randomly allocated to the 12 months of the year (i.e. 47 per month) so that each quarter provided a nationally representative sample.

Within each of the 564 PSUs sampled, 16 addresses were selected. In total, therefore, there were 9,024 (= 564 x 16) addresses. When visited by interviewers, 9.8% of the selected addresses in the sample were found not to contain private households.

Sampling addresses, dwelling units and households

Where an address was found to have multiple dwelling units, one was selected at random. Where there were multiple households at a dwelling unit (with a separate entrance), a single household was selected at random by the interviewer.

Sampling individuals within households

All adults aged 16 years and over at each household were selected for the interview (up to a maximum of ten adults). Where more than ten adults were present in a household, a random selection was made.

Overview of the SHeS sample design

The sample for the SHeS 2012 was designed to yield a representative sample of the general population living in private households in Scotland. A random sample of 4,459 addresses was selected from the small user PAF, using a multi-stage stratified design. This is the same sample frame as used for the HSE study. This also means that the population surveyed in the SHeS was people living in private households in Scotland respectively and that those living at addresses not on the PAF (less than1%) were not included.

Selecting sampling units

The sample for the 2012-2015 Scottish Health Surveys was designed by the Scottish Government. The sample design was coordinated with the sample designs for the Scottish Household Survey and the Scottish Crime and Justice Survey as part of a survey efficiency project and to allow the samples of the three surveys to be pooled for further analysis. Addresses selected for any of the surveys in this four-year period are removed from the sample frame so that they cannot be re-sampled for another survey. The addresses are removed from the sample frame for a minimum of four years.

An initial sample of 4,459 addresses was drawn from the PAF. All PSUs were randomly allocated to one of four years of SHeS fieldwork (2012-2015). This meant that each year the sample was drawn from one quarter of the available PSUs and ensured that over four years (2012-2015) of fieldwork all addresses had a non-zero probability of selection. The overall number of addresses for each stratum was then sampled from the sampling frame of addresses in PSUs for that year. Systematic random sampling was used to select addresses within PSUs ordered by urban-rural classification, Scottish Index of Multiple Deprivation rank and postcode.

Sampling addresses, dwelling units and households

Where an address was found to have multiple dwelling units, one was selected at random. Where there were multiple households at a dwelling unit (with a separate entrance), a single household was selected at random by the interviewer.

SHeS: Sampling individuals within households

All adults aged 16 years and over at each household were selected for the interview (up to a maximum of ten adults). Where more than ten adults were present in a household a random selection was made.

Data collection procedures

Timing of fieldwork

HSE and SHeS fieldwork took place between January 2012 and February 2013. Data collection on the SHeS finished slightly earlier than the HSE survey.

Training and supervision of interviewers

Experienced NatCen interviewers were selected to work on the HSE and SHeS. Interviewers were fully briefed by the research team on the administration of each survey.

On both studies, interviewers were given training including a practice session and accreditation for measuring height and weight. Interviewers were required to pass an accreditation test for these measures before working on the study. Interviewers were provided with full sets of written instructions covering both survey procedures and measurement protocols.

Interviewers who had worked on the previous year's surveys attended full day refresher training sessions, where the emphasis was on updating them on new topic coverage, improving measurement skills and gaining respondent participation. All interviewers new to both health surveys were accompanied by a supervisor during the early stages of their work to ensure that interviews and protocols were being correctly followed. Routine supervision of 10% of the work of interviewers was carried out subsequently.

Ethical approval

Ethical approval for the HSE 2012 was obtained from the Oxford A Research Ethics Committee (reference number: 10/H0604/56). Ethical approval for the SHeS 2012 was obtained from the Multi-Centre Research Ethics Committee for Wales (REC reference number: 11/WA/0246).

Fieldwork approach

Advance letter and making contact

In both the HSE and SHeS 2012 an advance letter was sent by the interviewer to all sampled addresses. This informed potential respondents of the survey, explained the purpose, confirmed that it was anonymous and confidential and let them know that an interviewer would be visiting to seek their co- operation.

In the HSE a leaflet was also enclosed providing general information about the survey and some of the findings from previous surveys. A small incentive, in the form of a £5 voucher, was enclosed with the advance letter to encourage participation.

In the SHeS a copy of the survey leaflet was included with every advance letter. The survey leaflet introduced the survey, described its purpose in more detail and included some summary findings from previous surveys. An incentive, in the form of a £10 Post Office voucher, was enclosed within the advance letter to encourage participation.

In the HSE and SHeS at initial contact, the interviewer established the number of dwelling units and/or households at an address, and made any selection necessary. The interviewer then made contact with each selected household and attempted to interview all adults (up to a maximum of ten).

Collection of individual information

Information was collected in the same way for both the HSE and SHeS. Both surveys used computer assisted interviewing. At each co-operating eligible household, the interviewer first completed a household questionnaire, information being obtained from the household reference person or their partner wherever possible. This questionnaire obtained information about all members of the household, regardless of age. The computer program then created individual questionnaires for each eligible participant in the household. An individual interview was carried out with all selected adults. In order to reduce the amount of time spent in a household, interviews could be carried out concurrently, the program allowing for up to four participants to be interviewed in a session.

Quality control

A large number of quality control measures were built into both surveys at both data collection and subsequent stages to check on the quality of interviewer performance. Recalls to check on the work of interviewers were carried out at 10% of productive households.

The computer program used by interviewers had in-built soft checks (which can be suppressed) and hard checks (which cannot be suppressed) which included messages querying uncommon or unlikely answers as well as answers outside an acceptable range. For example, if someone aged 16 or over had a height entered in excess of 1.93 metres, a message asked the interviewer to confirm that this was a correct entry (a soft check), and if someone said they had carried out an activity on more than 28 days in the past four weeks the interviewer would not be able to enter this (a hard check).

Survey response

HSE response rates

Interviews were held in 5,219 households with 8,291 adults aged 16 and over. 5,470 adults had a nurse visit.

Response to the survey can be calculated in two ways: at a household level and at an individual level. Interviews were carried out at 64% of sampled eligible households (after removing vacant and other ineligible addresses). Interviews were obtained with 85% of adults in 'co-operating' households (where at least one person was interviewed).

The assumption is made that households where the number of adults was not known contained, on average, the same number of adults as households where it was known. On this basis, the individual response rate, based on all eligible households, was estimated to be 56% among adults.

SHeS response rates

Interviews were held in 6,602 households with 4,815 adults aged 16 and over. 1,020 adults also completed the biological module. Interviews were carried out at 66% of sampled eligible households. Interviews were obtained with 90% of adults in 'co-operating' households (where at least one person was interviewed).

The individual response rate, based on all eligible households, was estimated to be 56% among adults.

Fuller details about household, individual and biological measures response rates can be found in the technical reports for both surveys.

Weighting

In addition to producing a new combined dataset, a number of further weights needed to be produced to a) scale the data so that it matched the population distribution of England and Scotland and b) weight the data for non-response to both the gambling participation questions and the problem gambling screens. These are detailed below.

Gambling participation weights

The sub-sample of 11,774 HSE and SHeS respondents who answered at least one of the gambling participation questions was calibrated separately within the HSE and SHeS, so that the weighted distributions of age-by-gender and region (SHA for the HSE, Health Board for the SHeS) matched the ONS 2012 mid-year population estimates for England and Scotland respectively.

For each eligible case, the HSE/SHeS combined weight was calculated by dividing the calibrated (grossed) weight by the overall mean. Table A1shows the distribution of cases in England and Scotland after weighting. The weights were scaled to have a mean of 1.

Table A1 Sample distribution after gambling participation (GAP) weighting				
	Population		GAP weights	
	N	%	N	%
England	42659341	90.95	10708	90.95
Scotland	4245660	9.05	1066	9.05
Total	46905001	100.00	11774	100.00

Problem gambling (DSM-IV and PGSI) weights

The sub-sample of HSE and SHeS respondents who completed the problem gambling screens (DSM-IV:10,872, PGSI: 10,857) was calibrated separately within the HSE and SHeS, so that the weighted distributions of age-by-gender and region (SHA for the HSE, Health Board for the SHeS) matched the ONS 2012 mid-year population estimates for England and Scotland respectively.

For each eligible case, the HSE/SHeS combined weight was calculated by dividing the calibrated (grossed) weight by the overall mean, separately for DSM-IV and PGSI. Table A2 shows the distribution of cases in England and Scotland after weighting. The weights were scaled to have a mean of 1.

Table A2 Sample distribution after DSM-IV and PGSI weighting						
	Population		DSM-IV weights		PGSI weights	
	N	%	N	%	N	%
England	42659341	90.95	9888	90.95	9874	90.95
Scotland	4245660	9.05	984	9.05	983	9.05
Total	46905001	100.00	10872	100.00	10857	100.00

BGPS weights

For each of the BGPS 2010, 2007 and 1999 surveys, the sub-sample of respondents in England and Scotland (7,319 in 2010, 8,469 in 2007 and 7,176 in 1999) was calibrated so that the weighted distributions of age-by-gender (within England and Scotland) and Government Office Region matched the ONS mid-year population estimates.

For each survey, the weight was calculated for each case by dividing the calibrated (grossed) weight by the overall mean. Cases with missing age or sex were assigned the average weight within age and sex groups respectively. Table A3 shows the distribution of cases in England and Scotland after weighting each of the three surveys. The weights per survey were scaled to have a mean of 1.

Table A3	Sample distribution after weighting			
	2010			
	Population		BGPS	
	N	%	N	%
England	41695467	90.77	6643	90.77
Scotland	4240466	9.23	676	9.23
Total	45935933	100.00	7319	100.00
	2007			
England	41034296	90.74	7685	90.74
Scotland	4186938	9.26	784	9.26
Total	45221234	100.00	8469	100.00
	1999			
England	38639632	90.54	6497	90.54
Scotland	4039502	9.46	679	9.46
Total	42679134	100.00	7176	100.00

Scoring the problem gambling screening instruments

Introduction

Two screening instruments were used to identify problem gamblers: the DSM-IV and the PGSI. This section explains how each instrument was scored and the thresholds used to classify a problem gambler.

Scoring the DSM-IV: dichotomous scoring

The bulk of this report uses the dichotomous scoring system for the DSM-IV. The DSM-IV criteria, along with the corresponding question number from the questionnaire from the self-completion booklet are shown in the first two columns of Table A4. The third column shows which responses were counted as positive.

Table A4	DSM-IV items
Item	'Positive'
Chasing losses	Every time I lost/Most of the time I lost
A preoccupation with gambling	Fairly Often/Very Often
A need to gambling with increasing amounts of money	Fairly Often/Very Often
Being restless or irritable when trying to stop gambling	Fairly Often/Very Often
Gambling as escapism	Fairly Often/Very Often
Lying to people to conceal the extent of gambling	Fairly Often/Very Often
Having tried but failed to cut back on gambling	Fairly Often/Very Often
Having committed a crime to finance gambling	Occasionally/Fairly Often/Very Often
Having risked or lost a	Occasionally/Fairly Often/Very Often

relationship/job/educational opportunity because of gambling	
Reliance on others to help in a financial crisis caused by gambling	Occasionally/Fairly Often/Very Often

The threshold for 'problem gambling' was 3 or over, in line with previous research[11] and the 2007 and 1999 prevalence survey. Cases were excluded from the problem gambling analysis if more than half the DSM-IV items were missing (and the score was <3). Only four cases were excluded for this reason.

Scoring the PGSI

The PGSI criteria are shown in Table A5.

Table A5 PGSI items
Bet more than can afford to lose
A need to gamble with increasing amounts of money
Chasing losses
Borrowed money or sold items to get money to gamble
Felt had a problem with gambling
Gambling causing health problems including stress and anxiety
People criticising gambling behaviour
Gambling causing financial problems for you or your household
Felt guilty about way that you gamble or what happens when you gamble

All nine PGSI items have the following response codes: never, sometimes, most of the time, almost always. The response codes for each item are scored in the following way:

- score 0 for each response of 'never';
- score 1 for each response of 'sometimes';
- score 2 for each 'most of the time';
- score 3 for each 'almost always'.

This means a PSGI score of between 0 and 27 points is possible. There are four classifications categories for PGSI scores. Their description and scored cut-off points are shown in Table A6.

Table A6 PGSI categories	
PGSI classification category	**PGSI score**
Non-problem gambler	0
Low risk gambler	1-2
Moderate risk gambler	3-7
Problem gambler	8+

The threshold for 'problem gambling' was 8 or over, in line with previous research.[12] Cases were excluded from the problem gambling analysis if more than half the PGSI items were missing (and the score was <8). A total of four cases were excluded for this reason (these are the same four cases as were excluded from the DSM-IV analysis).

Latent Class Analysis

A key question in exploratory Latent Class Analysis (LCA) is how many classes the sample should be divided into. However, there is no definitive method of determining the optimal number of classes. Because models with different numbers of latent classes are not nested, this precludes the use of a difference likelihood-ratio test.

For each LCA (for men and women), we produced seven solutions (ranging from two to eight clusters) and used the following five ways to check these and decide on the optimal solution:

(a) Looking at measures of fit such as Akaike's Information Criterion (AIC and AIC3) and the Bayesian Information Criterion (BIC). In comparing different models with the same set of data, models with lower values of these information criteria are preferred.

(b) Looking at the misclassification rate. The expected misclassification error for a cluster solution is computed by cross-classifying the modal classes by the actual probabilistic classes. The sum of cases in the diagonal of this cross-classification corresponds to the number of correct classifications achieved by the modal assignment of cluster probabilities. The following formula is then applied: error=100*correct classifications/all cases. Models with lower misclassification rates are preferred.

(c) Looking at the percentage of cases in each cluster with a low probability of cluster membership. The vast majority of cases in a cluster should exhibit a high probability of belonging to the cluster, typically above 0.6.

(d) The resulting classes should be stable. For example, when moving from a six to a seven cluster solution, one of the clusters from the six-cluster solution should split to form two clusters in the seven-cluster option with the other clusters remaining largely unchanged. Cluster stability is investigated by cross-classifying successive cluster solutions.

(e) The resulting classes have to be interpreted. For the purposes of this analysis the main importance in deciding the number of classes was placed on interpretability.

The following tables and charts show checks (a) to (d) for each LCA.

Women

Figure A3

Measures of fit

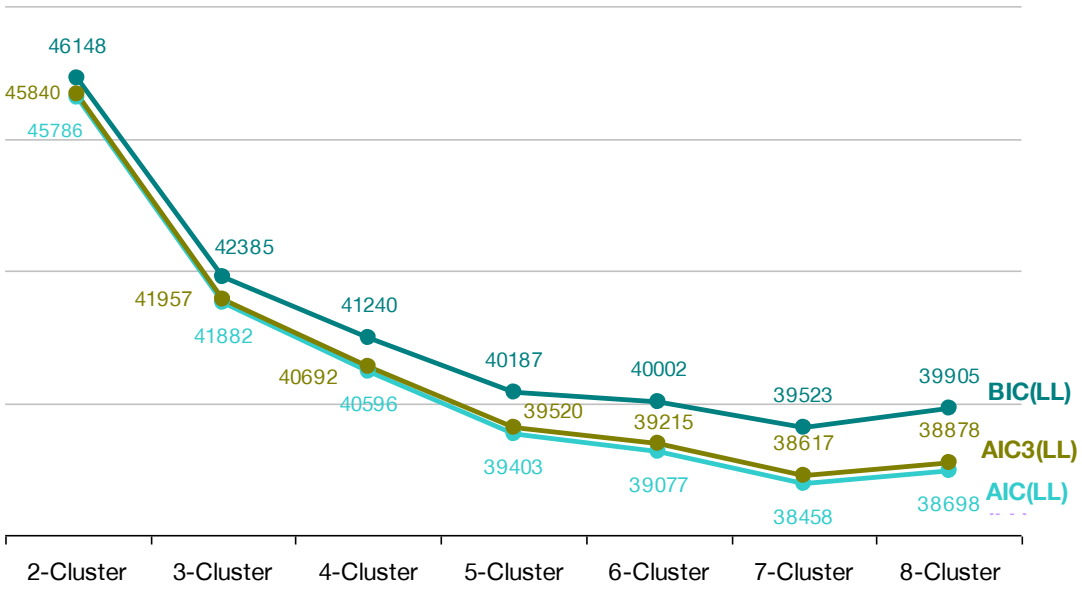


Table A7

Misclassification error (%)

2-cluster	3-cluster	4-cluster	5-cluster	6-cluster	7-cluster	8-cluster
0.01	0.02	1.9	1.4	2.69	0.59	3.19

Table A8

% of cases with cluster membership probability less than 0.6 (seven-cluster solution)

	Cluster A	Cluster B	Cluster C	Cluster D	Cluster E	Cluster F	Cluster G
%	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
N	2488	1550	442	489	577	687	353

Table A9

Stability of clusters (seven-cluster solution)

	Cluster A	Cluster B	Cluster C	Cluster D	Cluster E	Cluster F	Cluster G	All
Cluster A	2488	0	0	0	0	0	0	2488
Cluster B	0	1550	0	0	0	0	0	1550
Cluster C	0	0	442	0	564	460	0	1466
Cluster D	0	0	0	489	0	0	0	489
Cluster E	0	0	0	0	0	0	353	353
Cluster F	0	0	0	0	13	227	0	240
All	2488	1550	442	489	577	687	353	6586

Men

Figure A4

Measures of fit

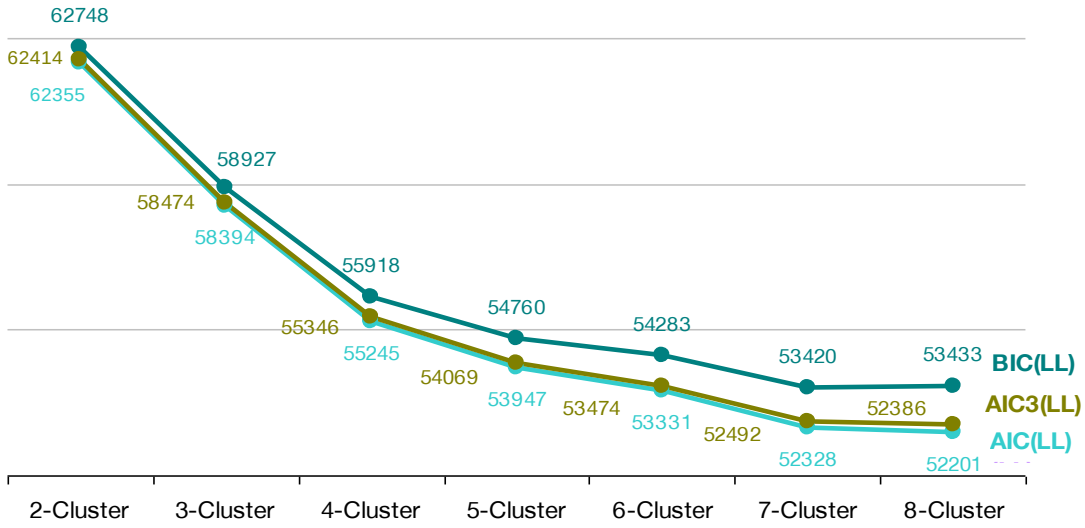


Table A10

Misclassification error (%)

2-cluster	3-cluster	4-cluster	5-cluster	6-cluster	7-cluster	8-cluster
0.01	0.59	0.37	1.26	3.55	2.08	4.47

Table A11

% of cases with cluster membership probability less than 0.6 (seven-cluster solution)

	Cluster A	Cluster B	Cluster C	Cluster D	Cluster E	Cluster F	Cluster G
%	<0.01	<0.01	3.36	<0.01	4.71	3.95	<0.01
N	1625	1261	1072	421	616	152	41

Table A12

Stability of clusters (seven-cluster solution)

	Cluster A	Cluster B	Cluster C	Cluster D	Cluster E	Cluster F	Cluster G	All
Cluster A	1625	0	0	0	0	0	0	1625
Cluster B	0	0	755	421	0	0	0	1176
Cluster C	0	1261	0	0	0	0	0	1261
Cluster D	0	0	317	0	237	0	0	554
Cluster E	0	0	0	0	379	73	0	452
Cluster F	0	0	0	0	0	79	41	120
All	1625	1261	1072	421	616	152	41	5188

Logistic regression procedure for all models

For all models presented in this report, stepwise logistic regression was used to identify significant predictors of different gambling behaviours (i.e. predicting LCA class membership, problem gambling status etc). For the LCA regressions 14 models were considered (seven for men and seven for women, one per cluster) and in each one, class membership was the binary dependent variable (1: belonging to the cluster, 0: not belonging to the cluster). For the at-risk models, one model was produced where at-risk gambling (both low and moderate according to the PGSI) was the binary variable (1: at-risk gambling, 0 non-problem gambling). For the problem gambling regression, one model was produced where problem gambling according to either the DSM-IV or the PGSI was the binary variable (1: problem gambler, 0 non-problem gambler). In all models, the 16 socio-economic and health indicators discussed in Chapter 3 were included as independent variables.

Missing values were recoded to the mode for each variable, except for NS-SEC of household reference person, Equivalised Household Income quintiles, Body Mass Status group, GHQ-12 score and Warwick-Edinburgh Mental Wellbeing score, where they were included as a separate category.

All analyses were performed in STATA (a statistical analysis package) within the survey module (svy) which takes into account the complex sample and weighting structure of the HSE.

Because stepwise regression is not available in STATA's survey module, the stepwise procedure for each model considered, was simulated using the following steps:

A. A forward stepwise logistic regression with all independent variables was initially run outside the svy module (i.e. using the 'sw' command).

B. The variables identified as significant (at the 95% significance level) were then included in an 'svy logit' regression to test whether they remained significant.

C. If one variable was found to be not significant (if its p-value was greater than 0.05), it was removed from the model, and the model with the remaining variables was re-run and re-checked.

D. If more than one variable were found to be not significant, the one with the largest p-value was removed and the model with the remaining variables was re-run and re-checked.

E. When no more variables could be removed (because their p-value was less than 0.05), all other variables not in the model were added one-by-one (i.e. separate 'svy logit' models were run – as many as the remaining variables – with the existing variables plus one of the remaining ones at a time).

F. If none of the additional variables were significant, the procedure stopped and the initial model from step E was the final model.

G. If one of the additional variables was significant, then the variables already in the model were checked for removal. Variables were removed one at a time (the variable with the largest p-value was removed first), until no more variables could be removed.

H. If more than one additional variable was significant, the one with the smallest p-value entered the model and the remaining variables were checked for removal in the same way as in step G. The remaining significant variables were then entered, one at a time, based on their p-value (variables with the smallest p-value taking precedence) and after each entry the model was re-checked for variable removals.

I. If at this step the current model was different from the one at step E, the algorithm continued and steps E to H were repeated. The procedure stopped when there were no changes to the model (in terms of the significant variables included) between iterations.

Data analysis and reporting

Presentation of results

In general, the commentary highlights differences that are statistically significant at the 95% level. This means that there is a 5 in 100 chance that the variation seen is simply due to random chance. It should be noted that statistical significance is not intended to imply substantive importance.

Statistical packages and computing confidence intervals

All survey data are estimates of the true proportion of the population sampled. With random sampling, it is possible to estimate the margin of error either side of each percentage, indicating a range within which the true value will fall.

These margins of error vary according to different features of a survey, including the percentage of the estimate for the sampled population, the number of people included in the sample, and the sample design.

Survey data are typically characterised by two principal design features: unequal probability of selection requiring sample weights, and sampling within clusters. Both of these features have been considered when presenting the combined survey results. Firstly, weighting was used to minimise response bias and ensure that the achieved sample was representative of the general population living in private households. Secondly, results have been analysed using the complex survey module in PASW v18 and the survey module in STATA, which can account for the variability introduced through the use of a complex, clustered, survey design.

The survey module in STATA is designed to handle clustered sample designs and account for sample-to-sample variability when estimating standard errors, confidence intervals and performing significance testing. Given the relatively low prevalences of problem gambling estimates, the tabulate command was used to compute 95% confidence intervals for these estimates. The distinctive feature of the tabulate command is that confidence intervals for proportions are

constructed using a logit transformation so that their end point always lies between 0 and 1. (The standard errors are exactly the same as those produced by the mean command).

Notes and references

[1] See the BGPS 2010 for further discussion of these changes: Wardle, H., et al. (2011) *British Gambling Prevalence Survey 2010*, Birmingham: Gambling Commission.

[2] Laplante, D.A., Nelson, S.E., Gray, H.M. (2013) Breadth and Depth Involvement: Understanding Internet Gambling Involvement and its Relationship to Gambling Problems. Psychology of Addictive Behaviors. [Epub ahead of print].

[3] Lesieur, H.R., Rosenthal, M.D. (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: 5-40.

[4] Abbott, M., Volberg, R. (2007) The measurement of adult problem and pathological gambling. *International Gambling Studies,* 6: 175-200.

[5] American Psychiatric Association. (1994) *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV)*. USA: APA.

[6] The full wording of the items in the DSM-IV and PGSI screens is available in the self-completion booklets, included in Appendix B of this report.

[7] This is with the exception of 'chasing losses' which is rated on a scale ranging between 'never' and 'every time I lost'.

[8] 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.

[9] The categorisation and screening of problem and pathological gambling has been reviewed and revised in the recently published DSM-V. Main changes proposed are that the term 'pathological gambling' be replaced with the term 'gambling disorder', that the crime criterion be removed from classification and that the threshold for identifying 'gambling disorders' be dropped from 5 (formerly the threshold for identifying pathological gamblers) to 4. However, the DSM-V was not officially released at the time of the HSE 2012 fieldwork. Therefore, this chapter uses the standards set by the DSM-IV and replicates the scoring methods used in the BGPS series to allow comparisons to be made.

[10] Some researchers have recommended that different (lower) thresholds should be used when identifying problem gamblers using the PGSI. However, these recommendations have not been universally accepted and are not currently endorsed by the original developers of the PGSI instrument. Therefore, this chapter uses the thresholds and categorisation recommended by the original developers and replicates the methods used in the BGPS, also allowing comparisons to be made.

[11] Lesieur, H.R., Rosenthal, M.D. (1993). Analysis of pathological gambling for the Task Force on DSM-IV in Widiger T., Frances A., Pincus H., Ross R. (eds) (1993). Source book for the Diagnostic and Statistical Manual, Fourth edition: Volume Four, Washington D.C: American Psychiatric Association.

[12] Wynne, H. (2003). *Introducing the Canadian Problem Gambling Index,* Canada http://www.gamblingresearch.org/download.sz/The%20CPGI%20V5%20-%20from%20Hal.pdf?docid=6446

Appendix B. Gambling questions

Qa Have you spent any money on any of the following activities **in the last 12 months?** Please tick **ONE box** for each activity.

	Tick ONE box	
	Yes	**No**
Tickets for the National Lottery Draw, including Thunderball and Euromillions and tickets bought online	1	2
Scratchcards (but not online or newspaper or magazine scratchcards)	1	2
Tickets for any other lottery, including charity lotteries	1	2
The football pools	1	2
Bingo cards or tickets, including playing at a bingo hall (not online)	1	2
Fruit or slot machines	1	2
Virtual gaming machines in a bookmakers to bet on virtual roulette, poker, blackjack or other games	1	2
Table games (roulette, cards or dice) in a casino	1	2
Playing poker in a pub tournament/ league or at a club	1	2

Online gambling like playing poker, bingo, instant win/scratchcard games, slot machine style games or casino games for money	1	2
Online betting with a bookmaker on any event or sport	1	2
Betting exchange *This is where you lay or back bets against other people using a betting exchange. There is no bookmaker to determine the odds. This is sometimes called 'peer to peer' betting.*	1	2
Betting on **horse** races in a bookmakers, by phone or at the track	1	2
Betting on **dog** races in a bookmakers, by phone or at the track	1	2
Betting on **sports events** in a bookmakers, by phone or at the venue	1	2
Betting on **other events** in a bookmakers, by phone or at the venue	1	2
Spread-betting *In spread-betting you bet that the outcome of an event will be higher or lower than the bookmaker's prediction. The amount you win or lose depends on how right or wrong you are.*	1	2
Private betting, playing cards or games for money with friends, family or colleagues	1	2
Another form of gambling in the last 12 months	1	2

IF YOU TICKED 'YES' FOR ANY OF THE ACTIVITIES AT Qa, PLEASE GO TO Qb OTHERWISE GO TO THE NEXT SECTION.

For the next set of questions about gambling, please indicate the extent to which each one has applied to you in the last 12 months.

	In the last 12 months…	**Tick ONE box**			
		Every time I lost	**Most of the time**	**Some of the time (less than half the time I lost)**	**Never**
Qb	When you gamble, how often do you go back another day to win back money you lost?	1	2	3	4

		Tick ONE box for each question			
		Very often	**Fairly often**	**Occasionally**	**Never**
Qc	How often have you found yourself thinking about gambling (that is reliving past gambling experiences, planning the next time you will play, or thinking of ways to get money to gamble)?	1	2	3	4
Qd	Have you needed to gamble with more and more money to get the excitement you are looking for?	1	2	3	4
Qe	Have you felt restless or irritable when trying to cut down gambling?	1	2	3	4
Qf	Have you gambled to escape from problems or when you are feeling depressed, anxious or bad about yourself?	1	2	3	4
Qg	Have you lied to family, or others, to hide the extent of your gambling?	1	2	3	4
Qh	Have you made unsuccessful attempts to control, cut back or stop gambling?	1	2	3	4
Qi	Have you committed a crime in order to finance gambling or to pay gambling debts?	1	2	3	4

Qj	Have you risked or lost an important relationship, job, educational or work opportunity because of gambling?	1	2	3	4
Qk	Have you asked others to provide money to help with a desperate financial situation caused by gambling?	1	2	3	4

In the past 12 months, how often...

		Tick ONE box for each question			
		Almost always	**Most of the time**	**Sometimes**	**Never**
Ql	...have you bet more than you could really afford to lose?	1	2	3	4
Qm	...have you needed to gamble with larger amounts of money to get the same excitement?	1	2	3	4
Qn	...have you gone back to try to win back the money you'd lost?	1	2	3	4
Qo	...have you borrowed money or sold anything to get money to gamble?	1	2	3	4
Qp	...have you felt that you might have a problem with gambling?	1	2	3	4
Qq	...have you felt that gambling has caused you any health problems, including stress or anxiety?	1	2	3	4
Qr	...have people criticised your betting, or told you that you have a gambling problem, whether or not you thought it is true?	1	2	3	4
Qs	...have you felt your gambling has caused financial problems for you or your household?	1	2	3	4
Qt	...have you felt guilty about the way you gamble or what happens when you gamble?	1	2	3	4