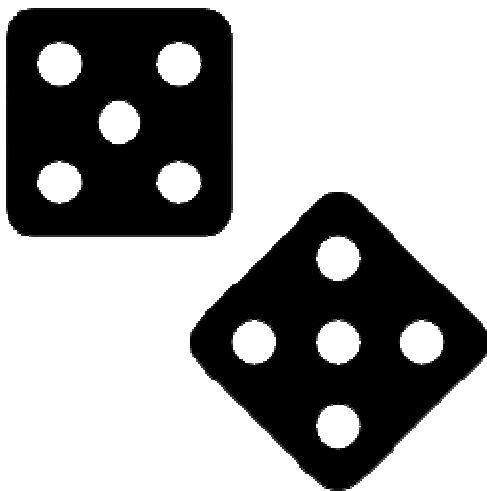


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Gambling behaviour in England & Scotland

Headline findings from the Health Survey for
England 2012 and Scottish Health Survey 2012



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Carla Seabury, Heather Wardle

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1 Introduction

Purpose

This report provides a brief statistical bulletin of gambling behaviour in England and Scotland, using data combined from the Health Survey for England 2012 and Scottish Health Survey 2012. A fuller report of findings will be published in summer 2014.

Background

Information about gambling behaviour in Britain was previously collected in 1999, 2007 and 2010 from the British Gambling Prevalence Survey (BGPS). In 2010, following a public consultation, the decision was made to discontinue the BGPS and instead include a module of questions on gambling participation and problem gambling in both the Health Survey for England (HSE) and the Scottish Health Survey (SHeS) in 2012. It was not possible to secure gambling questions on the Welsh Health Survey. However, evidence from the BGPS series has shown that gambling behaviour in Wales is similar to England and Scotland.

Information about gambling behaviour in each jurisdiction was published in 2013.¹ As the individual health survey reports presented information for each jurisdiction separately, the Gambling Commission required that the results of the two surveys be combined to provide information based on a representative sample of England and Scotland together. This report is the first output from this broader project, providing headline figures on gambling participation and problem gambling prevalence for England and Scotland collectively. A full report providing an in-depth analysis of gambling participation and associations with problem and at-risk gambling will follow in the summer of 2014.

Data from each health survey have been reweighted to be proportionate to the population size of each respective country so that when combined they are representative of England and Scotland together. All findings relate to adults aged 16 and over, living in private households in England and Scotland. Those living in institutions were outside the scope of the survey.

¹ Wardle, H., & Seabury, C. (2013) 'Chapter 9: Gambling Behaviour' in Craig, R., Mindell, J. (eds) *Health Survey for England 2012: Vol 1: Health, social care and lifestyles*. Leeds: Health and Social Care Information Centre; Wardle, H. (2013) 'Chapter 9: Gambling Behaviour' in Rutherford, L., Hinchliffe S., Sharp, C. (eds) *The Scottish Health Survey: Vol 1: Main report*. Edinburgh.

Report conventions

- The data used in this report have been weighted. The weighting strategy is described in the Appendix to 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.
- 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.
- 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.
- 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. The section on comparisons with the BGPS series is the exception to this. Whether changes are significant or not is made clear in this section.
- See 'Table conventions' in Section 3 for details on the conventions used in the tables.

2 Headline results

Participation in gambling

Rates of gambling participation, overall and by sex and age

- 65% of English and Scottish adults (aged 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 broad pattern by age 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 those who only played the National Lottery² were excluded from analysis. Overall, 43% of English and Scottish adults had gambled on other activities in the past year. Men remained significantly more likely than women to participate in other forms of gambling overall (46% and 40% respectively).
- When National Lottery only gamblers are excluded from analysis a different pattern between gambling participation and age is evident. Participation in all other forms of gambling were highest among the youngest age groups (50% for those aged 16-24 and 52% for those aged 25-34) and declined with age (30% for those aged 75 and over). This pattern was the same for both men and women.

Gambling participation rates for individual activities, by sex and age

- 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 tend to be more likely than women to take part in most activities and to have a larger repertoire of gambling activity than women. The exceptions to this are bingo, with men being less likely to participate than women (3% and 7% respectively); scratchcards, with men and women being equally likely to participate (19% and 20% respectively) and other lotteries, again with men and women being equally likely to take part (14% for each).

² Reference to the National Lottery throughout this report refers to National Lottery draws only. A separate category is provided for scratchcards. Respondents were asked the following question in relation to the National Lottery “*Tickets for the National Lottery Draw, including Thunderball and Euromillions and tickets bought online*” and asked to indicate whether they had spent any money on this activity in the past 12 months.

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- 11% of men and 4% of women had gambled online (excluding purchasing National Lottery tickets online) in the past year.
 - For most gambling activities, participation rates by age were highest for the youngest age group and declined with advancing age. This pattern was largely the same for both men and women. Activities where the pattern by age differed were National Lottery play as described above; other lotteries, the prevalence of which was similar for most age groups and lowest for the youngest adults; horse racing, the prevalence of which was similar for most age groups but was lowest among the oldest adults; and dog racing and bingo, for which there was no clear age pattern.
 - Prevalence of online gambling was higher among younger age groups (11% for those aged 16-24; 15% for those aged 25-34) and lower among older age groups (1% for those aged 75 and over). This pattern was the same among both men and women.

Number of gambling activities undertaken overall and by sex and age

- On average, adults in England and Scotland took part in 1.5 different forms of gambling in the past year. Men took part in 1.7 different forms of gambling in the past year on average whereas women took part in significantly fewer (1.2).
- Among both men and women the average number of gambling activities varied by age and tended to be higher among younger age groups than older age groups. For men, estimates varied from 2.5 gambling activities for those aged 25-34 to 0.9 for those aged 75 and over. Among women, equivalent estimates were 1.5 and 0.8.
- These findings demonstrate that while the majority of the population participates in gambling, most tend to take part in only one or two activities. This is evident for all age groups.

Problem gambling prevalence

Defining problem gambling

- Problem gambling is gambling to a degree that compromises, disrupts or damages family, personal or recreational pursuits.³
- 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 Problem Gambling Severity Index (PGSI).

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 (1): 5-40.

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- The DSM-IV screening instrument contains ten diagnostic criteria ranging from chasing losses to committing a crime to fund gambling. Each DSM-IV item is assessed on a four-point scale, ranging from 'never' to 'very often.' A total score between 0 and 10 is possible and a threshold of meeting at least three of the DSM-IV criteria is used to define problem gambling.⁴
 - The PGSI was developed for use among the general population rather than within a clinical context and was tested and validated in Canada 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. Scores for each item are summed to give a total score ranging from zero to 27. A score of eight or more on the PGSI represents problem gambling.⁵

Problem gambling prevalence rates, overall and by sex

- 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).
- There is no gold standard or commonly accepted way to measure problem gambling in population based surveys. 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 again being more likely than women to be classified as a problem gambler (1.0% and 0.2% respectively).

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

⁵ Ferris, J., Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*, Canada: The Canadian Centre on Substance Abuse.

Problem gambling prevalence rates, by age

- Among all adults problem gambling prevalence rates according to the DSM-IV did not vary by age. However, among men, problem gambling prevalence did vary 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.
- A similar pattern was evident when looking at the PGSI. Among all adults, rates did not vary by age but among men only estimates fell from 1.7% of those aged 16-24 to 0.4% among those aged 65-74.
- Looking at problem gambling prevalence according to either screen shows the same pattern, with problem gambling estimates among men falling from 2.4% for those aged 16-24 and falling to 0.4% for those aged 75 and over.
- Among women, for both screens, there were too few observations to be able to discern a distinct pattern of problem gambling prevalence by age.

Problem gambling prevalence rates among past year gamblers, overall and by sex and age

- According to the DSM-IV, problem gambling prevalence among past year gamblers was 0.7%. Rates were higher among past year male gamblers (1.2%) than female gamblers (0.2%).
- According to the PGSI, problem gambling prevalence among past year gamblers for England and Scotland combined was 0.6%. Rates were also higher among male gamblers (1.0%) than female gamblers (0.2%).
- According to either the DSM-IV or PGSI, problem gambling prevalence among past year gamblers for England and Scotland combined was 0.9%. Rates among male gamblers were 1.5% and were 0.3% among female gamblers.
- There were no discernible patterns related to problem gambling prevalence among past year gamblers and age according to either the DSM-IV or the PGSI.

Problem gambling prevalence among past year gamblers by activity

- For simplicity, the problem gambling prevalence rates quoted in this section are those who were categorised as a problem gambler according to **either** the DSM-IV or the PGSI. However, the patterns presented are the same when looking at DSM-IV rates and PGSI rates individually.
- Among those who had gambled in the past year, problem gambling prevalence was highest among those who had spreadbet⁶ (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 with a bookmaker (12.9%), bet with a betting exchange⁷ (10.6%) and played machines in bookmakers (7.2%).
- National Lottery play (0.9%) and scratchcards (1.7%) had the lowest problem gambling prevalence of all activities.
- Notably, 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 took part in just one activity (0.1%). This pattern was evident among both men and women, although men typically displayed higher levels of problem gambling prevalence for each activity level than women, as detailed earlier.

At-risk gambling prevalence

- In addition to the identification of problem gambling, the PGSI is also identifies 'at risk' gambling and containing two further sub-categories of gambling behaviour: 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 an 'at risk' gambler.
- As with problem gambling, rates of low risk and moderate risk gambling were higher among men than women. Among men, estimates were 4.8% (low risk) and 1.7% (moderate risk) and among women were 1.6% (low risk) and 0.4% (moderate risk).

⁶ These figures must be treated with some caution due to relatively low base sizes; only 52 people had spreadbet in the past year.

⁷ These figures must be treated with some caution due to relatively low base sizes; only 78 people had used betting exchanges in the past year.

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- Low risk gambling prevalence was higher among younger adults (7.3% of those aged 16-24) and was lowest among older adults aged 75 and over (0.9%). Estimates for both men and women followed a similar pattern by age.
 - The highest rates of moderate risk gambling were again observed among the youngest adults aged 16-24 (2.3%), following which there was no clear pattern by age. This was the same among both men and women.

Comparisons with the British Gambling Prevalence Survey Series

Comparisons of the combined HSE/SHeS data with the BGPS estimates should be made with caution. While the methods and questions used in each survey were the same, the survey vehicle was not. HSE and SHeS are general population health surveys, whereas the BGPS series was specifically designed to understand gambling behaviour and attitudes to gambling in greater detail.

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. That said, this section presents a broad overview of key estimates between the BGPS series (comparing estimates for England and Scotland only)⁸ and the combined English and Scottish health surveys data.

- According to the combined health survey data for England and Scotland, problem gambling rates as defined by the DSM-IV were 0.5%. These rates were similar to those 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 2010.⁹
- 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.

⁸ To enable comparison, Wales was removed from the BGPS series data and estimates recalculated. BGPS data presented here is based on England and Scotland only.

⁹ The PGSI was only included in the BGPS series from 2007 onwards, therefore the BGPS 1999 is excluded from this analysis.

3 Tables

Table 1: Participation in gambling in the past 12 months (overall and individual activities), by age and sex.

Table 2: Number of gambling activities undertaken in past 12 months, by age and sex.

Table 3: Problem gambling prevalence (DSM-IV, PGSI and either), by age and sex.

Table 4: Problem gambling prevalence (DSM-IV, PGSI and either) among past year gamblers, by age and sex.

Table 5: Problem gambling prevalence (DSM-IV, PGSI and either) among past year gamblers, by activity.

Table 6: Problem gambling prevalence (DSM-IV, PGSI and either) among past year gamblers, by number of gambling activities and sex.

Table conventions

1. The group on which the figures in the table are based is stated at the upper left corner of the table.
2. The data in most tables have been weighted (*see the Appendix for more detail*). Both unweighted and weighted sample sizes are shown at the foot of each table.
3. The following conventions have been used in tables:
 - no observations (zero value).
 - 0 non-zero values of less than 0.5% and thus rounded to zero (except for problem gambling estimates which are shown to one decimal place due to low prevalence).
 - [] used to warn of small sample bases, if the unweighted base is less than 50. If a group's unweighted base is less than 30, data are normally not shown for that group.
4. Because of rounding, row or column percentages may not add exactly to 100%.
5. 'Missing values' occur for several reasons, including refusal or inability to answer a particular question; refusal to co-operate in an entire section of the survey; and cases where the question is not applicable to the participant. In general, missing values have been omitted from all tables and analyses.

Table 1

Participation in gambling in the past 12 months (overall and individual activities), by age and sex

Aged 16 and over

2012

Activities on which spent money in past 12 months	Age group							Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	
Men								
Lotteries and related products								
National Lottery	33	58	66	64	60	57	43	56
Scratchcards	29	29	24	15	10	8	6	19
Other lotteries	7	16	16	12	15	20	17	14
Machines/games								
Football pools	12	6	2	3	2	4	3	5
Bingo (not online)	4	4	3	3	3	3	4	3
Slot machines	21	21	9	6	4	2	2	10
Machines in a bookmakers	12	10	4	2	1	1	0	5
Casino table games (not online)	12	11	4	3	2	1	0	5
Poker played in pubs or clubs	6	6	2	1	0	1	-	2
Online gambling on slots, casino or bingo games	9	9	5	2	1	0	0	4
Betting activities								
Online betting with a bookmaker	12	17	9	6	2	2	1	8
Betting exchange	4	3	1	1	1	1	-	2
Horse races (not online)	10	15	14	13	11	10	7	12
Dog races (not online)	4	7	4	2	2	2	2	4
Sports events (not online)	17	14	8	7	3	3	0	8
Other events (not online)	4	3	2	1	1	1	0	2
Spread betting	2	2	0	1	1	0	0	1
Private betting	19	14	8	4	3	3	1	8
Other gambling activity								
Any other gambling	6	3	2	2	1	2	1	3
Summary								
<i>Any gambling activity</i>	60	72	74	72	69	68	54	68
<i>Any gambling (excluding National Lottery)</i>	55	58	51	42	37	37	32	46
<i>Any online gambling (excluding National Lottery)</i>	17	22	13	8	4	3	1	11
<i>No gambling in past 12 months</i>	40	28	26	28	31	32	46	32
Bases (unweighted)^a								
<i>Men</i>	474	605	856	928	880	877	482	5102
Bases (weighted)								
<i>Men</i>	862	973	996	992	829	591	425	5668

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

Table 1 (continued)

Participation in gambling in the past 12 months (overall and individual activities), by age and sex

Aged 16 and over

2012

Activities on which spent money in past 12 months	Age group							Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	
Women								
Lotteries and related products								
National Lottery	32	53	54	57	57	50	36	49
Scratchcards	29	28	22	17	15	11	8	20
Other lotteries	9	12	14	14	18	18	15	14
Machines/games								
Football pools	2	1	1	0	1	1	1	1
Bingo (not online)	8	8	7	6	5	9	8	7
Slot machines	9	6	6	4	2	1	1	4
Machines in a bookmakers	3	2	1	0	1	0	0	1
Casino table games (not online)	3	2	1	1	1	0	0	1
Poker played in pubs or clubs	1	0	0	-	0	0	0	0
Online gambling on slots, casino or bingo games	3	3	2	1	2	0	0	2
Betting activities								
Online betting with a bookmaker	3	4	2	1	1	1	1	2
Betting exchange	-	0	0	0	0	0	0	0
Horse races (not online)	8	13	9	9	8	5	3	8
Dog races (not online)	3	3	2	2	1	1	1	2
Sports events (not online)	1	3	2	1	1	0	1	1
Other events (not online)	0	1	0	0	0	0	0	0
Spread betting	0	0	0	-	-	0	0	0
Private betting	2	5	3	2	2	1	1	2
Other gambling activity								
Any other gambling	1	1	0	1	1	0	0	1
Summary								
<i>Any gambling activity</i>	52	66	65	66	66	62	51	62
<i>Any gambling (excluding National Lottery)</i>	45	46	42	39	37	35	29	40
<i>Any online gambling (excluding National Lottery)</i>	6	7	4	2	3	1	1	4
<i>No gambling in past 12 months</i>	48	34	35	34	34	38	49	38
Bases (unweighted)^a								
<i>Women</i>	616	904	1128	1184	1034	895	673	6434
Bases (weighted)								
<i>Women</i>	843	968	1007	1011	852	633	569	5883

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

Table 1 (continued)

Participation in gambling in the past 12 months (overall and individual activities), by age and sex

Aged 16 and over

2012

Activities on which spent money in past 12 months	Age group							Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	
All								
Lotteries and related products								
National Lottery	32	56	60	60	58	53	39	52
Scratchcards	29	29	23	16	12	10	7	19
Other lotteries	8	14	15	13	17	19	16	14
Machines/games								
Football pools	7	4	1	2	1	2	2	3
Bingo (not online)	6	6	5	4	4	6	6	5
Slot machines	15	14	8	5	3	2	1	7
Machines in a bookmakers	8	6	3	1	1	0	0	3
Casino table games (not online)	8	6	3	2	1	1	0	3
Poker played in pubs or clubs	4	3	1	0	0	0	0	1
Online gambling on slots, casino or bingo games	6	6	3	2	2	0	0	3
Betting activities								
Online betting with a bookmaker	7	11	5	4	2	1	1	5
Betting exchange	2	2	1	1	0	1	0	1
Horse races (not online)	9	14	11	11	10	7	5	10
Dog races (not online)	4	5	3	2	2	1	1	3
Sports events (not online)	9	9	5	4	2	1	1	5
Other events (not online)	2	2	1	1	1	0	0	1
Spread betting	1	1	0	0	0	0	0	1
Private betting	11	10	5	3	3	2	1	5
Other gambling activity								
Any other gambling	3	2	1	1	1	1	1	2
Summary								
<i>Any gambling activity</i>	<i>56</i>	<i>69</i>	<i>70</i>	<i>69</i>	<i>68</i>	<i>65</i>	<i>52</i>	<i>65</i>
<i>Any gambling (excluding National Lottery)</i>	<i>50</i>	<i>52</i>	<i>47</i>	<i>40</i>	<i>37</i>	<i>36</i>	<i>30</i>	<i>43</i>
<i>Any online gambling (excluding National Lottery)</i>	<i>11</i>	<i>15</i>	<i>8</i>	<i>5</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>7</i>
<i>No gambling in past 12 months</i>	<i>44</i>	<i>31</i>	<i>30</i>	<i>31</i>	<i>32</i>	<i>35</i>	<i>48</i>	<i>35</i>
Bases (unweighted)^a								
<i>All</i>	<i>1090</i>	<i>1509</i>	<i>1984</i>	<i>2112</i>	<i>1914</i>	<i>1772</i>	<i>1155</i>	<i>11536</i>
Bases (weighted)								
<i>All</i>	<i>1705</i>	<i>1941</i>	<i>2003</i>	<i>2004</i>	<i>1681</i>	<i>1224</i>	<i>994</i>	<i>11551</i>

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

Table 2

Number of gambling activities undertaken in the past 12 months, overall and by sex and age

Aged 16 and over

2012

Number of gambling activities in past 12 months	Age group							Total
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	%
Men								
Non-gamblers	40	28	26	28	31	32	46	32
1 activity	16	20	27	34	38	38	28	28
2-3 activities	21	27	31	28	25	25	23	26
4-6 activities	13	15	13	9	5	5	2	10
7 or more activities	10	10	3	1	1	0	0	4
Mean number of activities	2.3	2.5	1.9	1.5	1.3	1.2	.9	1.7
Standard error of mean	0.21	0.14	0.08	0.06	0.05	0.05	0.06	0.05
Women								
Non-gamblers	48	34	35	34	34	38	49	38
1 activity	19	27	29	33	37	36	32	30
2-3 activities	25	28	28	29	25	24	18	26
4-6 activities	7	11	7	4	4	2	1	5
7 or more activities	1	1	1	0	0	0	0	1
Mean number of activities	1.2	1.5	1.3	1.2	1.2	1.0	.8	1.2
Standard error of mean	0.08	0.07	0.05	0.05	0.05	0.04	0.06	0.02
All								
Non-gamblers	44	31	30	31	32	35	48	35
1 activity	17	23	28	33	37	37	30	29
2-3 activities	23	27	30	28	25	24	20	26
4-6 activities	10	13	10	6	5	3	2	8
7 or more activities	5	5	2	1	1	0	0	2
Mean number of activities	1.7	2.0	1.6	1.3	1.2	1.1	.9	1.5
Standard error of mean	0.11	0.08	0.05	0.04	.04	0.04	0.04	0.03
Bases (unweighted)								
Men	474	605	856	928	880	877	482	5102
Women	616	904	1128	1184	1034	895	673	6434
All	1090	1509	1984	2112	1914	1772	1155	11536
Bases (weighted)								
Men	862	973	996	992	829	591	425	5668
Women	843	968	1007	1011	852	633	569	5883
All	1705	1941	2003	2004	1681	1224	994	11551

Table 3

Problem gambling prevalence rates (DSM-IV^a, PGSI^b and either), by age and sex^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								
DSM-IV								
DSM-IV score 0-2	97.9	99.0	99.8	99.2	99.6	99.5	99.6	99.2
DSM-IV score 3+ (problem gambler)	2.1	1.0	0.2	0.8	0.4	0.5	0.4	0.8
Mean DSM-IV score	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.1
Standard error of mean	0.07	0.04	0.01	0.02	0.02	0.01	0.01	0.01
PGSI								
Non problem (score 0)	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
<i>Problem or at risk gambler (score 1+)</i>	15.8	10.3	5.6	5.9	3.3	3.0	3.0	7.2
Mean PGSI score	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.2
Standard error of mean	0.15	0.08	0.04	0.03	0.03	0.03	0.03	0.03
Either								
Non-problem gambler according to 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
<i>Bases (unweighted)^d</i>								
<i>Men</i>	462	588	820	875	830	813	446	4834
<i>Bases (weighted)^d</i>								
<i>Men</i>	808	911	930	926	778	557	404	5314

^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.

^d Bases shown are for DSM-IV problem gambling screen; bases for the PGSI and either screen are of similar magnitude.

Table 3 (continued)

Problem gambling prevalence rates (DSM-IV^a, PGSI^b and either), by age and sex^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+ %	
Women								
DSM-IV								
DSM-IV score 0-2	99.7	100.0	99.6	99.9	100.0	99.8	100.0	99.9
DSM-IV score 3+ (problem gambler)	0.3	-	0.4	0.1	-	0.2	-	0.1
Mean DSM-IV score	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Standard error of mean	0.02	0.01	0.01	0.01	0.01	0.02	0.00	0.00
PGSI								
Non problem (score 0)	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
<i>Problem or at risk gambler (score 1+)</i>	5.0	2.4	1.7	2.3	1.3	0.7	0.2	2.1
Mean PGSI score	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Standard error of mean	0.03	0.01	0.02	0.02	0.02	0.00	0.00	0.01
Either								
Non-problem gambler according to 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
Bases (unweighted)^d								
<i>Women</i>	598	873	1055	1122	963	807	620	6038
Bases (weighted)^d								
<i>Women</i>	783	910	948	948	803	606	558	5558

^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.

^d Bases shown are for DSM-IV problem gambling score; bases for the PGSI score and either score are of similar magnitude.

Table 3 (continued)

Problem gambling prevalence rates (DSM-IV^a, PGSI^b and either), by age and sex^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+	
	%	%	%	%	%	%	%	%
All								
DSM-IV								
DSM-IV score 0-2	98.8	99.5	99.7	99.6	99.8	99.7	99.8	99.5
DSM-IV score 3+ (problem gambler)	1.2	0.5	0.3	0.4	0.2	0.3	0.2	0.5
Mean DSM-IV score	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Standard error of mean	0.04	0.02	0.01	0.01	0.01	0.01	0.01	0.01
PGSI								
Non problem (score 0)	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
<i>Problem or at risk gambler (score 1+)</i>	10.5	6.3	3.7	4.1	2.3	1.8	1.4	4.6
Mean PGSI score	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1
Standard error of mean	0.08	0.04	0.03	0.02	0.02	0.02	0.01	0.02
Either								
Non-problem gambler according to 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)^d								
<i>All</i>	1060	1461	1875	1997	1793	1620	1066	10872
Bases (weighted)^d								
<i>All</i>	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 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.

^d Bases shown are for DSM-IV problem gambling score; bases for the PGSI score and either score are of similar magnitude.

Table 4

Problem gambling prevalence (DSM-IV^a, PGSI^b and either) among past year gamblers, by age and sex^c

Past year gamblers, 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								
DSM-IV								
DSM-IV score 0-2	96.4	98.6	99.7	98.9	99.4	99.2	99.3	98.8
DSM-IV score 3+ (problem gambler)	3.6	1.4	0.3	1.1	0.6	0.8	0.7	1.2
Mean DSM-IV score	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1
Standard error of mean	0.11	0.05	0.01	0.03	0.02	0.02	0.02	0.02
PGSI								
Non problem (score 0)	72.9	85.4	92.3	91.6	95.0	95.5	93.9	89.2
Low risk (score 1-2)	19.1	10.3	4.3	5.6	3.4	2.7	3.5	7.3
Moderate risk (score 3-7)	5.1	3.0	2.7	2.3	0.9	1.2	2.5	2.6
Problem gambler (score 8+)	2.8	1.3	0.6	0.4	0.7	0.6	0.1	1.0
<i>Problem or at risk gambler (score 1+)</i>	27.1	14.6	7.7	8.4	5.0	4.5	6.1	10.8
Mean PGSI score	0.8	0.5	0.3	0.2	0.2	0.2	0.2	0.3
Standard error of mean	0.25	0.11	0.05	0.05	0.05	0.05	0.07	0.04
Either								
Non-problem gambler according to DSM-IV or PGSI	95.9	98.4	99.3	98.7	99.2	99.0	99.3	98.5
Problem gambler according to either DSM-IV or PGSI	4.1	1.6	0.7	1.3	0.8	1.0	0.7	1.5
Bases (unweighted)^d								
<i>Men</i>	286	436	617	627	566	533	230	3295
Bases (weighted)^d								
<i>Men</i>	475	644	680	651	524	364	201	3539

^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.

^d Bases shown are for DSM-IV problem gambling score; bases for the PGSI score and either score are of similar magnitude.

Table 4 (continued)

Problem gambling prevalence (DSM-IV^a, PGSI^b and either) among past year gamblers, by age and sex^c

Past year gamblers, 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+	
	%	%	%	%	%	%	%	%
Women								
DSM-IV								
DSM-IV score 0-2	99.5	100.0	99.3	99.8	100.0	99.7	100.0	99.8
DSM-IV score 3+ (problem gambler)	0.5	-	0.7	0.2	-	0.3	-	0.2
Mean DSM-IV score	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Standard error of mean	0.03	0.01	0.02	0.02	0.01	0.03	0.01	0.01
PGSI								
Non problem (score 0)	90.2	96.4	97.2	96.4	98.0	98.7	99.5	96.5
Low risk (score 1-2)	6.6	3.2	1.6	3.3	1.5	1.3	0.5	2.6
Moderate risk (score 3-7)	3.0	0.5	0.8	0.2	0.2	-	-	0.7
Problem gambler (score 8+)	0.2	-	0.5	0.2	0.3	-	-	0.2
<i>Problem or at risk gambler (score 1+)</i>	9.8	3.6	2.8	3.6	2.0	1.3	0.5	3.5
Mean PGSI score	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Standard error of mean	0.05	0.02	0.04	0.03	0.04	0.01	0.01	0.01
Either								
Non-problem gambler according to DSM-IV or PGSI	99.5	100.0	99.1	99.8	99.7	99.7	100.0	99.7
Problem gambler according to either DSM-IV or PGSI	0.5	-	0.9	0.2	0.3	0.3	-	0.3
<i>Bases (unweighted)^d</i>								
<i>Women</i>	316	579	678	735	624	474	296	3702
<i>Bases (weighted)^d</i>								
<i>Women</i>	398	590	589	601	511	349	261	3299

^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.

^d Bases shown are for DSM-IV problem gambling score; bases for the PGSI score and either score are of similar magnitude.

Table 4 (continued)

Problem gambling prevalence (DSM-IV^a, PGSI^b and either) among past year gamblers, by age and sex^c

Past year gamblers, 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+ %	
All								
DSM-IV								
DSM-IV score 0-2	97.8	99.3	99.6	99.3	99.7	99.4	99.7	99.3
DSM-IV score 3+ (problem gambler)	2.2	0.7	0.4	0.7	0.3	0.6	0.3	0.7
Mean DSM-IV score	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.1
Standard error of mean	0.07	0.03	0.01	0.02	0.01	0.02	0.01	0.01
PGSI								
Non problem (score 0)	80.8	90.7	94.6	93.9	96.5	97.1	97.1	92.7
Low risk (score 1-2)	13.4	6.9	3.0	4.5	2.5	2.0	1.8	5.0
Moderate risk (score 3-7)	4.1	1.8	1.8	1.3	0.6	0.6	1.1	1.6
Problem gambler (score 8+)	1.6	0.7	0.6	0.3	0.5	0.3	0.0	0.6
<i>Problem or at risk gambler (score 1+)</i>	19.2	9.3	5.4	6.1	3.5	2.9	2.9	7.3
Mean PGSI score	0.5	0.3	0.2	0.2	0.1	0.1	0.1	0.2
Standard error of mean	0.14	0.06	0.04	0.03	0.03	0.03	0.03	0.02
Either								
Non-problem gambler according to DSM-IV or PGSI	97.5	99.1	99.2	99.2	99.5	99.3	99.7	99.1
Problem gambler according to <i>either</i> DSM-IV or PGSI	2.5	0.9	0.8	0.8	0.5	0.7	0.3	0.9
Bases (unweighted)^d								
<i>All</i>	602	1015	1295	1362	1190	1007	526	6997
Bases (weighted)^d								
<i>All</i>	872	1234	1269	1252	1035	714	461	6837

^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.

^d Bases shown are for DSM-IV problem gambling score; bases for the PGSI score and either score are of similar magnitude.

Table 5

Problem gambling prevalence (DSM-IV^a, PGSI^b and either) among past year gamblers, by gambling activity^c

Past year gamblers, aged 16 and over

Activities on which spent money in past 12 months		Problem gambling prevalence									2012
		Problem gambler according to DSM-IV	Bases un-weighted	Bases weighted	Problem gambler according to PGSI	Bases un-weighted	Bases weighted	Problem gambler according to either DSM-IV or PGSI	Bases un-weighted	Bases weighted	
All											
Lotteries and related products											
National Lottery	%	0.8	5883	5616	0.7	5868	5602	0.9	5911	5646	
Scratchcards	%	1.3	2000	2119	1.2	1999	2120	1.7	2007	2128	
Other lotteries	%	1.4	1613	1554	1.2	1609	1551	1.8	1622	1564	
Machines/games											
Football pools	%	2.8	316	304	3.9	318	308	4.0	319	308	
Bingo (not online)	%	2.8	667	604	2.4	663	600	3.4	669	606	
Slot machines	%	1.8	675	796	2.5	673	795	2.6	677	799	
Machines in a bookmakers	%	5.7	264	333	6.4	262	333	7.2	264	333	
Casino table games (not online)	%	4.7	302	366	5.0	300	365	6.0	302	366	
Poker played in pubs or clubs	%	9.8	109	148	11.9	108	148	13.2	109	148	
Online gambling on slots, casino or bingo games	%	4.8	297	351	4.9	294	350	6.3	297	352	
Betting activities											
Online betting with a bookmaker	%	2.6	496	559	3.1	493	555	3.8	497	560	
Betting exchange	%	8.8	78	103	10.3	77	103	10.6	78	104	
Horse races (not online)	%	1.8	1105	1140	1.8	1110	1136	2.3	1106	1141	
Dog races (not online)	%	3.7	264	316	4.0	262	315	4.2	264	316	
Sports events (not online)	%	4.5	484	531	4.3	480	527	5.8	484	532	
Other events (not online)	%	9.1	121	124	12.7	119	124	12.9	121	124	
Spread betting	%	16.0	52	61	20.5	51	60	20.9	52	61	
Private betting	%	1.6	436	592	2.1	436	595	2.2	437	595	
Other gambling activity											
Any other gambling	%	8.3	150	173	7.1	149	173	9.8	150	173	
Summary											
Any gambling (excluding National Lottery only)	%	1.1	4560	4637	0.9	4546	4623	1.3	4576	4657	
Any online gambling (excluding National Lottery)	%	3.3	709	799	3.1	704	793	4.2	710	800	

^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.

Table 6

Problem gambling prevalence (DSM-IV^a, PGSI^b and either) among past year gamblers, by number of gambling activities and sex^c

Past year gamblers, aged 16 and over

Number of gambling activities		Problem gambling prevalence									2012
		Problem gambler according to DSM-IV	<i>Bases un-weighted</i>	<i>Bases weighted</i>	Problem gambler according to PGSI	<i>Bases un-weighted</i>	<i>Bases weighted</i>	Problem gambler according to either DSM-IV or PGSI	<i>Bases un-weighted</i>	<i>Bases weighted</i>	
Men											
1 activity	%	0.2	1361	1386	0.2	1360	1384	0.2	1373	1401	
2-3 activities	%	0.7	1291	1390	0.4	1285	1380	0.9	1297	1397	
4-6 activities	%	2.6	468	539	1.7	468	541	3.0	468	540	
7 or more activities	%	7.3	175	223	8.1	174	224	9.2	175	223	
Women											
1 activity	%	0.1	1767	1535	-	1766	1536	0.1	1780	1548	
2-3 activities	%	0.2	1586	1415	0.2	1581	1410	0.2	1592	1422	
4-6 activities	%	1.2	323	319	0.8	323	319	1.6	323	319	
7 or more activities	%	*	26	29	*	25	28	*	26	29	
All											
1 activity	%	0.1	3128	2922	0.1	3126	2920	0.1	3153	2949	
2-3 activities	%	0.4	2877	2805	0.3	2866	2791	0.6	2889	2819	
4-6 activities	%	2.1	791	859	1.4	791	860	2.5	791	859	
7 or more activities	%	6.8	201	252	7.6	199	252	8.6	201	252	

^a DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, fourth version.

^b PGSI: Problem Gambling Severity Index.

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

* Estimates not shown because of small base sizes

Appendix: Methods

Overview

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). The recommendation was to instead include a module of questions on gambling participation and problem gambling in both the Health Survey for England (2012) (HSE 2012) and the Scottish Health Survey (2012) (SHeS 2012). Each survey covered the adult population aged 16 and over living in private households in England and Scotland respectively.

HSE is part of a programme of surveys currently commissioned by the Health and Social Care Information Centre and before April 2005 commissioned by the Department of Health. 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.

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.

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.

The sample for both HSE 2012 and SHeS 2012 was designed to be representative of the population living in private households in their respective jurisdiction, adopting a multi-stage stratified probability sampling design.

HSE fieldwork took place between January 2012 and February 2013; with SHeS being conducted between January 2012 and December 2012. Experienced NatCen interviewers were selected to work on HSE and SHeS. Interviewers were fully briefed by the research team on the administration of each survey.

Survey response

HSE

Interviews were held in 5,219 households with 8,291 adults aged 16 and over. 5,470 adults also 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 eligible households (after removing vacant and therefore 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

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 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.

Question methods

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.

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 last 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.

The list of gambling activities and descriptions presented to participants reflected those used in the BGPS 2007 as closely as possible. Exceptions included the addition of 'playing poker in pub or club' and of 'betting on sports events' (like football), which were added to reflect 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 and 2007, neither HSE nor SHeS included questions about frequency of gambling.

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’¹⁰. 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 being in existence). 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 DSM-IV.¹¹ The second, the PGSI¹², 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.

¹⁰ 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.

¹¹ American Psychiatric Association (1994) *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV)*. USA: APA

¹² Ferris, J. Wynne, H. (2001). *The Canadian Problem Gambling Index: Final Report*. Canada: The Canadian Centre on Substance Abuse.

Combining Datasets

For this study, it was necessary to produce a combined dataset of data from the HSE and SHeS. This involved a complex procedure of review, analysis and reconciliation of common variables to identify and reconcile important variables from each survey.

There were a number of data management tasks associated with producing the combined dataset:

- 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 are 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.

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 HSE and SHeS, so that the weighted distributions of age-by-gender and region (Strategic Health Authority for HSE, Health Board for 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 A4 shows 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 HSE and SHeS, so that the weighted distributions of age-by-gender and region (Strategic Health Authority for HSE, Health Board for 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 A5 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 (GOR) 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 A6 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