

REPORT

# CARDS ON THE TABLE

THE COST TO GOVERNMENT  
ASSOCIATED WITH PEOPLE  
WHO ARE PROBLEM GAMBLERS  
IN BRITAIN



Craig Thorley,  
Alfie Stirling  
and Edison Huynh

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IPPR

4th Floor

14 Buckingham Street

London WC2N 6DF

T: +44 (0)20 7470 6100

E: [info@ippr.org](mailto:info@ippr.org)

[www.ippr.org](http://www.ippr.org)

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## ABOUT THE AUTHORS

**Craig Thorley** is a senior research fellow at IPPR.

**Alfie Stirling** is senior economic analyst at IPPR.

**Edison Huynh** is public services intern at IPPR.

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# SUMMARY

## 60-SECOND SUMMARY

Gambling is a common feature of the everyday lives of many people across Great Britain, with up to three-quarters of adults estimated to gamble to some degree each year. While the vast majority gamble with no significant negative consequences, a minority – ‘problem gamblers’ – gamble to an extent which can seriously damage or disrupt their family, personal and working lives. Between 0.4 and 1.1 per cent of the British population are estimated to be problem gamblers. That’s up to 1 in every 90 adults.

There is a strong moral case for government to be concerned with this, as problem gambling acts to entrench and exacerbate socioeconomic disadvantages by disproportionately affecting individuals on low incomes and those with comorbid health problems. However, there is also a strong economic case. Problem gambling can be associated with a number of adverse impacts on the lives of individual problem gamblers, meaning they require higher rates of access to certain public services and provisions.

Based on the availability of data, it is possible to estimate a cost to government associated with individuals who are problem gamblers across six specific interactions with the state:

- **health costs:** primary care (mental health) services; secondary mental health services; and hospital inpatient services
- **welfare and employment costs:** JSA claimant costs and lost labour tax receipts
- **housing costs:** statutory homelessness applications
- **criminal justice costs:** incarcerations

Based on these six interactions, an illustrative estimate for the excess fiscal costs incurred by individuals who are problem gamblers is between £260 million to £1.16 billion per year (for Great Britain as a whole). This amount should be taken as the first step along the journey to understanding the total cost to government of problem gambling in Great Britain, and the starting point for future estimates as more data is collected.

## KEY FINDINGS

### Problem gambling in Great Britain

- between 61 and 73 per cent of adults in Great Britain gamble to some degree each year
- **between 0.4 and 1.1 per cent of the British adult population are estimated to be problem gamblers**, while around 4 per cent are estimated to be at-risk gamblers

- the likelihood of an individual being a problem gambler is strongly associated with certain socioeconomic and demographic characteristics:
  - gender: **men are five times more likely than women to be problem gamblers**
  - age: **while young people are the least likely to gamble, they are the most likely to be problem gamblers** – the highest rates of problem gambling are among the youngest age groups (2.1 per cent among 16–24-year-olds, and 1.5 per cent among 25–34-year-olds), while the lowest rates are among older adults (0.2 per cent of those aged 65 and over); this is in direct contrast to gamblers as a whole where the likelihood of an individual undertaking some form of gambling is lowest among the 16–24 age group.
  - income: **problem gambling is more prevalent among those with lower incomes** – 1.8 per cent of individuals in the fourth income quintile are problem gamblers, compared to 0.6 per cent of those in the first quintile; this is in direct contrast to gamblers as a whole, as those with the lowest personal income are the least likely to gamble, whereas individuals in the top two income quintiles have significantly higher rates of gambling
  - ethnicity: **problem gambling is more prevalent among some ethnic minority groups** – it is higher among those of Asian/Asian British origin (2.8 per cent) and Black/Black British origin (1.5 per cent) compared with those who identify as White/White British (0.8 per cent).

### **Costs to government associated with problem gambling**

It is possible to identify six particular interactions for which there is an *observable* association between an area of cost to government and an individual being a problem gambler, and for which there is sufficiently relevant and robust data:

- **health costs:** primary care (mental health) services; secondary mental health services; and hospital inpatient services
- **welfare and employment costs:** JSA claimant costs and lost labour tax receipts
- **housing costs:** statutory homelessness applications
- **criminal justice costs:** incarcerations

For Great Britain as a whole, illustrative estimates of these costs are as follows (lower–upper range):

- primary care (mental health) services (£10–£40 million)
- secondary mental health services (£30 million–£110 million)
- hospital inpatient services (£140 million–£610 million)
- JSA claimant costs and lost labour tax receipts (£40 million–£160 million)
- statutory homelessness applications (£10 million–£60 million)
- incarcerations (£40 million–£190 million)

Due to limitations in the available data, these findings should not be taken as the excess fiscal cost caused by problem gambling. Instead, they should be taken as an illustrative estimate for the excess fiscal costs incurred *by people who are problem gamblers*, beyond those that

are incurred by otherwise similar members of the population. And due to variations in the quality of data for different areas of interaction, the methods for estimating excess incidence and unit costs are not directly comparable across different interactions. Nonetheless, summing the costs across different interactions gives a total excess fiscal cost of **between £260 million and £1.16 billion per year for Great Britain as a whole.**<sup>1</sup> **The costs for England, Scotland and Wales are, respectively, between £200 million and £570 million, £20 million and £60 million, and £40 million and £70 million.**

This should be taken as the first step along the journey to understanding the total cost to government of problem gambling in Great Britain, and the starting point for future estimates as more data is collected.

In order for this to be achievable, there is an urgent need for central government departments, local authorities, service providers, academics and the responsible gambling community to come together to fill gaps in the available evidence base.

Problem gambling affects the lives of millions of people across Great Britain, and, as such, also has a significant impact on the public finances. It is time for government – both central, local and devolved – to sit up and take notice of the impact of problem gambling on individuals and communities, and to take measures to reduce the number of problem gamblers, ensuring that effective services are available to help those whose lives are blighted by this ‘hidden addiction’.

## RECOMMENDATIONS

- **Urgent need to fill gaps in the available evidence base**
  - involving central government departments, local authorities, service providers, academics and the responsible gambling community
  - screening for problem gambling in a wider number of population-level surveys
  - taking more opportunities to screen for problem gambling as individuals come into contact with frontline services
  - training professionals on the frontline to identify problem gambling wherever possible
- **A government strategy to tackle problem gambling and reduce gambling-related harm**
  - Department for Culture, Media and Sport working together with other affected departments
  - developing a clear national strategy as a precursor to effective local implementation
  - recognise problem gambling as a public health issue
  - how can the number of problem gamblers be reduced in the first instance? how can problem gamblers be better able to access services to aid treatment and recovery? is it too easy for people to access gambling activities, and so risk becoming

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<sup>1</sup> This total range may not tally exactly with the sum of the six component ranges listed above due to discrepancies in rounding.

problem gamblers? is there a link between the extent of regulation of the gambling industry and prevalence of problem gambling?

- **Government must ensure that local areas have the systems in place and the resources available to tackle problem gambling locally**
  - problem gambling is often bound up with individuals who experience a number of complex, comorbid social problems
  - these are best addressed at the local level through integration and breaking down service silos
  - opportunity to capitalise on current trajectory towards greater devolution of health and social care to local areas.



# 1. INTRODUCTION

Gambling is a common feature of the everyday lives of many people across Great Britain,<sup>2</sup> with around three-quarters of adults gambling to some degree each year (BGPS 2011). A significant majority of those who gamble recreationally do so with few significant negative consequences. However, a minority – ‘problem gamblers’ – gamble to an extent that can seriously damage or disrupt everyday life, and, in the most extreme cases, can be entirely debilitating socially, physically, emotionally and financially.

Problem gambling is widely regarded as a ‘hidden addiction’ that too often goes unnoticed by service providers, and which does not enjoy an elevated position in the public consciousness compared to other forms of addiction such as alcoholism and substance misuse (George and Bowden-Jones 2014).

The probability of engaging in a range of potentially damaging, and costly, behaviours increases among problem gamblers. We can see this from the data collected by treatment providers, where problem gamblers report impacts on their health, finances and work (Gamcare 2016). This is supported by survey data showing one in four problem gamblers to have committed a crime to finance gambling, and just under half to have risked an educational opportunity due to gambling (BGPS 2011).

Since 1999, national prevalence surveys have been conducted to estimate the proportion of the British population who are problem gamblers. These surveys show there to have been no significant reduction over this time, with around 1 in 100 British adults now estimated to be problem gamblers (ibid). We should be concerned at the continued prevalence of problem gambling for two main reasons.

First, problem gambling can act to exacerbate and entrench socioeconomic disadvantages. It disproportionately affects individuals on low incomes and those from ethnic minorities, for example. Given the impacts of problem gambling on the lives of those affected, there is an urgent *moral* case to reduce the numbers of people who go on to become problem gamblers, and to help those affected in the same way as is the case for other forms of addiction such as alcoholism and substance misuse.

Second, the impacts of problem gambling suggest that a problem gambler may be more likely to access the NHS or the criminal justice system, or to draw on the public finances in other ways through, for example, accessing out-of-work benefits. As well as the moral case, there is, therefore, an important *economic* case to be made for

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<sup>2</sup> Gambling in Northern Ireland is currently regulated by the Betting, Gaming, Lotteries and Amusements (Northern Ireland) Order (1985), broadly modelled on the Gaming Act (1968). Due to legal complexities arising from this act, this report focuses exclusively on England, Scotland and Wales.

reducing the number of problem gamblers and supporting those who are affected, particularly within the current era of fiscal consolidation.

In order to help make both the moral and economic case for a stronger government focus on problem gambling and its effects, this report aims to identify the excess fiscal cost associated with individuals who are problem gamblers. It aims to quantify the extent to which a problem gambler is more likely to access a range of areas of government expenditure, and so, in turn, identify the cumulative cost that can be said to be associated with an individual being a problem gambler in England, Scotland and Wales, and in Great Britain as a whole.

This is the first study to provide an estimate of this cost in Great Britain. There are two major reasons as to why there has been no publication of this kind until now.

First, there is a limited availability of appropriate data. In keeping with its status as a hidden addiction, there has been a widespread failure by government, service providers and academics to collect sufficient data on problem gambling in relation to other comorbidities and areas of government expenditure. In recognition of this limitation, this report focuses only on the small number of areas of cost to government where there is sufficient data. It is therefore not exhaustive of all areas for which, if there were sufficient data, one would expect to see a relationship with problem gambling.

Second, even where there is data, it is not sufficient to allow one to say that problem gambling has *caused* some cost to government to be incurred. For example, a problem gambler may be found to be more likely to spend time as a hospital inpatient, but they may also be found to be more likely to be a smoker or to be an alcoholic. Being able to say with any certainty that it is the individual's problem gambling which has caused the development of comorbidities, which have then caused them to visit hospital, is impossible. Instead, this report should be interpreted as identifying only costs to government that are *associated* with individuals who are problem gamblers (therefore also excluding secondary fiscal costs related to, for example, a problem gambler's friends or family drawing on additional state resources).

This report is based on the premise that 'money talks'. In other, related areas, we have seen how costing exercises of this kind have helped to provide the hard incentive for government departments to sit up and take notice of the effects of addiction on both the lives of those affected and the strength of the public finances. For example, a report published by the National Institute for Health and Care Excellence (NICE) in 2010 estimated that alcohol-related crime was costing the government between £8 billion and £13 billion per year (NICE 2010: 12). This helped to provide the impetus for the government's 2012 alcohol strategy, which set out plans for facilitating changes to drinking behaviour and reducing the harm that excessive drinking causes to individuals and society.

This report aims to highlight the extent of problem gambling in Great Britain, to build a picture of the range of comorbid social, health and financial problems that can occur alongside problem gambling, and to provide a first step on the road towards understanding the impact that

problem gambling has on the public finances. In doing so, we hope that the effects of problem gambling can go on to be better understood across government and society, making it a hidden addiction no longer.

## ABOUT THIS REPORT

The empirical research presented in this report was conducted between July and November 2016. It consisted of: interviews with academics, government officials and problem gambling treatment service providers; followed by in-depth analysis of existing academic literature and secondary data sources. The costings exercise adopts a mixed approach, with a three-step hierarchy.

1. Where possible, we use findings from statistical modelling conducted on population-level prevalence surveys and reported in the existing academic literature, stress tested and contextualised by our own updated analysis of the survey data.
2. In the absence of appropriate research in the academic literature, we conduct our own econometric analysis of population-level prevalence surveys.
3. In the absence of appropriate population-level survey data, we construct an estimate using meta-analysis of published UK-based descriptive evidence from convenience samples<sup>3</sup> of state service users outside of explicit gambling-related treatment.

Chapter 2 outlines the extent of gambling in Great Britain, how this is split according to groups with different socioeconomic and demographic characteristics, and how different gambling behaviours have been shaped by legislation and the policy context. Chapter 3 then examines the extent of problem gambling in particular, and, again, the extent of shared socioeconomic and demographic characteristics among this group. Chapters 2 and 3 focus on the data from four population-level surveys: the British Gambling Prevalence Survey, the Health Survey for England, the Scottish Health Survey, and the Welsh Problem Gambling Survey.

Chapter 4 explores what treatment-level data and existing British and international studies tell us about comorbidities associated with an individual being a problem gambler. Based on this assessment of the available data, chapter 5 turns to costing six particular interactions associated with an individual being a problem gambler. It then constructs estimates for the excess fiscal cost across each of these categories, and sums these together to produce an *illustrative* total cost to government, split across England, Wales and Scotland, and Great Britain as a whole.

Finally, chapter 6 sets out the authors' recommended next steps in order that problem gambling is tackled at both the local and national level, and that gambling-related harm is reduced.

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3 A convenience sample is a non-systematic ('non-probability') sample that is made up of easily reachable subjects, for example homeless people that use homelessness services.

### **Important methodological considerations**

There have been no previous attempts to undertake a costing exercise to establish the excess fiscal costs to the UK government associated with problem gambling. This is largely due to the limitations in available data, presenting two separate challenges.

1. It is not possible to isolate problem gambling from other comorbidities. This means we cannot identify the direction of causality between problem gambling and the incurrence of cost, nor can we be sure that other, confounding factors are not contributing to both.
2. Unit costs have to be estimated separately from associations between problem gambling and the incurrence of cost. This means the two will not necessarily correspond precisely. In addition, associations between problem gambling and different types of cost are estimated from different data sources using different methods and screening instruments, meaning they are not directly comparable.

The range for the population of problem gamblers is calculated using the 95 per cent confidence interval for the minimum and maximum prevalence rates from either the DSM-IV or PGSI respectively. We estimated the range for Great Britain as a whole in two ways: first, using the rate of prevalence from the British Gambling Prevalence Survey (BGPS); second, using the weighted average prevalence from the results of the Health Survey England (HSE), Scottish Health Survey (SHS) and Welsh Problem Gambling Survey (WPGS). The headline excess fiscal cost for Britain as a whole is therefore estimated using the upper and lower bound from the two ranges. The range for individual nations is estimated using the respective national surveys.

Fiscal cost is defined as a transfer from a government entity to a non-government entity: in this case an individual, or else the sum of individuals, who are problem gamblers. The 'excess' fiscal cost is the difference between the size of that transfer, over and above what might be expected for an otherwise similar individual or group of individuals in the rest of the population.

All costings are reported in 2015/16 prices.

For a full description of the methodology used, see chapter 4.

## 2. CONTEXT

### GAMBLING IN GREAT BRITAIN

Prior to developing an understanding of the costs to the state associated with problem gambling, it is necessary to take a step back and consider the wider context within which the British population engages in different gambling activities. This chapter begins by setting out how the legislative and policy framework underpinning gambling in Britain has evolved over time, and how the ‘responsible gambling’ agenda has emerged to become the dominant frame through which gambling is regulated. It then goes on to explore what population-level survey data tells us about the extent to which people in Great Britain (and England, Scotland and Wales individually) gamble, the ways in which they gamble (and how this has changed over time) and whether there are some groups which, according to the data, gamble more frequently than others.

#### 2.1 THE LEGISLATIVE AND POLICY LANDSCAPE

##### From prohibition to regulation

Despite being a longstanding feature of British society, it is only since 1960 that gambling has been recognised as a legal activity within Great Britain. Prior to then, it had existed largely as an informal, vice-like activity. For example, the Gaming Act 1845 outlawed all forms of commercialised gambling outside of specially designated private premises, displacing much gambling activity onto the streets (Donoughue 2000). Further legislative attempts at clamping down on gambling activity followed, such as the Street Betting Act 1906, but these proved largely ineffective at reducing the public appetite to gamble.

In the early twentieth century, government emphasis began to shift from prohibition to regulation as a means to control gambling activity. This paved the way for the Betting and Gambling Act 1960, which established gambling as a legal activity, and the Gaming Act 1968, which enforced a ‘regulatory pyramid’ confining ‘harder’ forms of gambling to certain permitted locations which were required to apply for a licence from government.

The Gambling Act 2005 was the next major piece of gambling legislation applying to Great Britain, and was designed to bring all forms of gambling together under a new regulatory body – the Gambling Commission. The act brought into effect changes including:

- transferral of authority for licensing gambling (at a premises level) from magistrates’ courts to local authorities or Scottish licensing boards
- regulation of ‘remote gambling’, including internet gambling, for the first time

- removal of restrictions on television advertisement (the government previously limited television ads to only national lottery, bingo and football pools).<sup>4</sup>

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### The ‘responsible gambling’ agenda

Advocates of the ‘responsible gambling’ agenda believe in the need to recognise the value that a significant section of society attaches to being able to gamble, and the enjoyment that many receive by participating freely in gambling activities. However, this includes a recognition of the need to provide additional help and support to those individuals for whom the effects of gambling are significantly harmful to their lives, affecting their health, work and relationships.

This is the position adopted by the Responsible Gambling Strategy Board (RGSB), which was established in 2008 in order to oversee the improved coordination of gambling research, education and treatment. The RGSB advises the Gambling Commission, and, via the commission, the government, the gambling industry and other stakeholders, on an appropriate national strategy to promote responsibility in gambling and to reduce or mitigate gambling-related harm through education and prevention programmes.

The three predominant initiatives and policy stances associated with the ‘responsible gambling’ agenda are as follows.

- Age restrictions: people aged under 16 should not have easy access to gambling and should be shielded from gambling advertisements.
- Self-restrictions: an individual should be able to restrict their own gambling activity by informing a gambling venue or provider that they no longer wish to participate in gambling (often for a fixed period of time) and that the venue or provider should therefore take active steps to prevent them from doing so.
- Personal responsibility: rather than place external restrictions on the extent to which individuals are able to gamble, or the amounts that they are able to gamble, an emphasis should be placed on education and public information programmes to help individuals to understand the risks associated with gambling and make informed choices. An example is the campaign ‘when the fun stops, stop’, which is backed by all major UK bookmakers.

There are, of course, groups and individuals who take positions contrary to those advocated by proponents of the ‘responsible gambling’ agenda. These might include a belief that access to gambling should be regulated more heavily by government, by, for example, reducing the amount that an individual is able to gamble in a single session, or reducing the visibility or availability of gambling opportunities in the same way as, for example, the visibility of tobacco products is limited on public health grounds. Such views may even extend to adopting an abolitionist position.

A discussion of the merits of the ‘responsible gambling’ agenda relative to opposing views are, though, beyond the scope of this report.

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<sup>4</sup> This more relaxed approach led to an increase in gambling-related television advertisement of almost 600 per cent between 2007 and 2013 (Ofcom 2013).

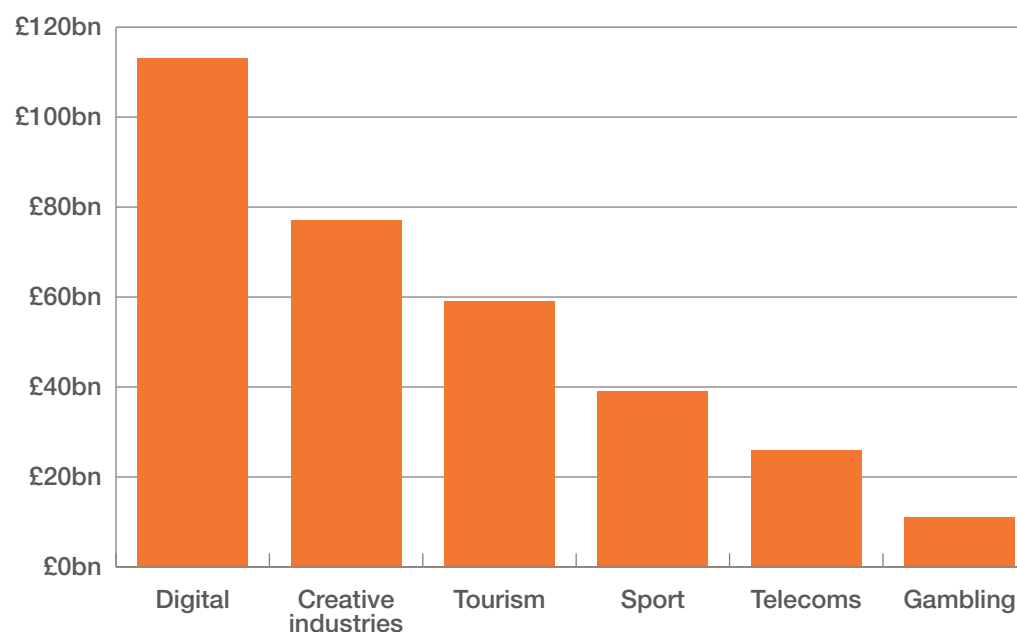
### The economic benefits of the gambling industry

This study does not seek to undertake a cost–benefit analysis, and is concerned only with identifying excess fiscal costs associated with problem gambling. However, it is worth noting at this early stage that the gambling industry does generate significant economic benefits to the government and wider society. In 2012, the gambling industry was estimated to contribute £10.64 billion in Gross Value Added (GVA) to the UK economy, equating to 0.7 per cent of the total UK GVA in that year (ONS 2014).<sup>5</sup> This was lower than the other sectors for which the Department for Culture, Media and Sport (DCMS) has responsibility, but was higher than for some other service- or entertainment-based sectors, such as ‘libraries, museums, archives and other cultural activities’ (£2.2 billion) (ONS 2016a).

**FIGURE 2.1**

#### Gambling generates considerable Gross Value Added, albeit less than other sectors overseen by DCMS

*GVA generated for DCMS sectors (2012–13)*



Source: DCMS ‘GVA of DCMS Sectors’ (DCMS 2015)

Note: GVA for the gambling and sport sectors is based on 2012 data, while all other sectors use 2013 data. ‘DCMS sectors’ defined as all those for which the Department for Culture, Media and Sport has policy responsibility for in 2016.

The economic benefits to society of the gambling industry were enhanced following the passing of the Gambling (Licensing & Advertising) Act 2014, which brought into law several updates to the 2005 act. These included a new requirement that all offshore gambling organisations apply for a licence from the Gambling Commission and submit to a 15 per cent ‘point of consumption’ (POC) tax on gross profits. Changing the taxation liability

<sup>5</sup> Gross Value Added (GVA) is a measure of economic output analogous to Gross Domestic Product (GDP). It consists of the return on resources employed, namely: profits generated, wages paid and (relevant) taxes paid.

of remote gambling in this way is expected to see a significant growth in the industry's contribution of tax revenues to the UK exchequer. In addition to GVA and tax revenue, the British gambling industry directly employed 108,000 people in September 2015 (Gambling Commission 2015a).

## 2.2 HOW MANY PEOPLE GAMBLE IN GREAT BRITAIN?

The UK has the tenth-highest gambling spend per capita in the world, with a gross gambling yield (GGY) per capita of \$283 in 2013.<sup>6</sup> This puts the UK behind countries including Australia (\$866), Italy (\$387) and the United States (\$319) (GBGC 2013). However, it is important that we understand how this gambling behaviour is spread across both the British population, and that of England, Scotland and Wales individually. To this end, the best available evidence comes via a number of population-level surveys to have been conducted in recent years.

### Great Britain

The British Gambling Prevalence Survey (BGPS) is the most commonly cited British survey to have sought to establish the extent of gambling activity among the adult population. The survey was first published in 1999, with subsequent publications in 2007 and, most recently, 2010.<sup>7</sup> It provides data on participation and prevalence across all forms of gambling in Great Britain, as well as attitudes to gambling. The methodology employed to collect the data in the 2010 BGPS was to use computer-assisted self-interviewing (CASI). This compared to previous versions of the study, which used self-completion questionnaires. This change was intended to reduce social-desirability bias and to capture greater levels of detail.

According to the 2010 BGPS, which had a sample size of 7,756 adults (aged 16 and over), just under three-quarters (73 per cent) of adults participated in some form of gambling over the previous year (75 per cent of men and 71 per cent of women). Removing the national lottery (the most common form of gambling), this figure fell to 56 per cent.

### England

Following the Gambling Commission's 'Collecting Adult Gambling Prevalence Data' consultation, which reported in September 2010, data on gambling prevalence and behaviour has been collected through surveys other than the BGPS. In 2012, questions related to gambling prevalence and behaviour were included in the Health Survey for England (HSE) for the first time.

This survey used a representative sample of the population at both the national and regional level, by surveying 9,024 households randomly selected across 564 postcode sectors. A total of 8,291 adults and 2,043 children were interviewed. Only those aged 16 and over were eligible to answer past year gambling participation questions (via self-completion surveys). A total of 7,359 adults answered gambling participation questions.

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6 Gross gambling yield (GGY) is the amount retained by operators after the payment of winnings, but before the deduction of the costs of the operation.

7 New BGPS data is due to be published in December 2016.



Sixty-five per cent of adults were found to have gambled over the previous year (68 per cent of men and 61 per cent of women), equal to almost 28 million people. Excluding those who only gambled by playing the national lottery, participation rates were 43 per cent (HSE 2013).

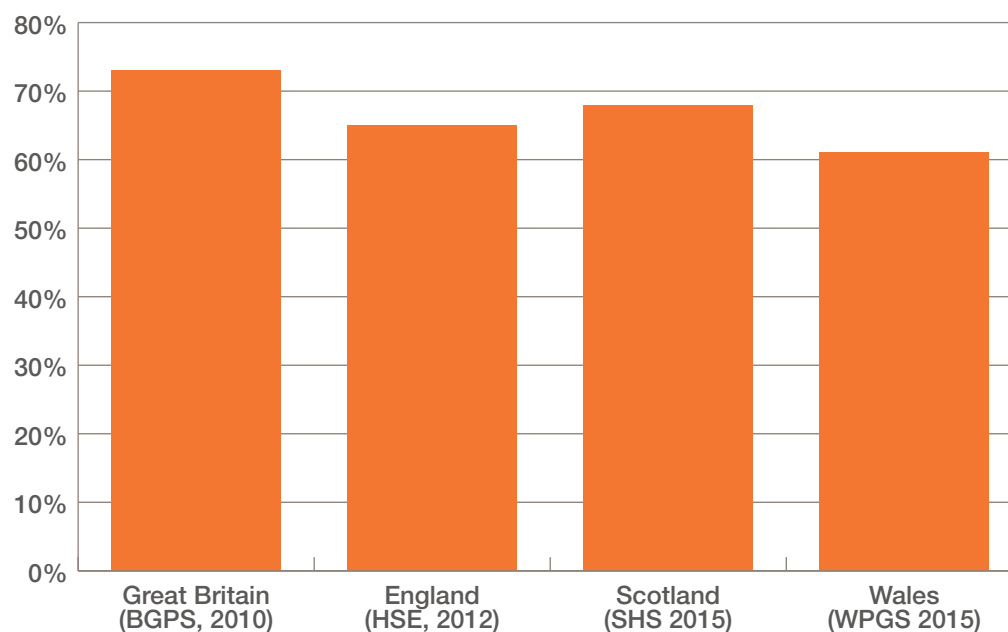
### Scotland

In 2015 the Scottish Health Survey selected a sample of 9,555 postal addresses, with data collected through a combination of CASI and a paper-self-completion questionnaire (SHS 2016). Of the households randomly selected, past year gambling participation data was obtained from 4,393 adults (from a total of 4,449 respondents).

The results estimated that 68 per cent of the adult population (aged 16 and over) in Scotland had undertaken at least one gambling activity over the previous 12 months (73 per cent of men and 63 per cent of women). This fell to 49 per cent after excluding those who had only gambled by playing the national lottery. This represented a slight increase on the 2013 survey, which found 70 per cent of adults in Scotland to have gambled over the previous year (SHS 2014).

**FIGURE 2.2**

**Surveys of the British, English, Scottish and Welsh populations show that a majority undertake some degree of gambling activity**  
*Percentage of the adult population (aged 16 and over) to have engaged in gambling activity in the previous 12 months\**



Sources: for Great Britain, *British Gambling Prevalence Survey 2010* (BGPS 2011); for England, *Health Survey for England 2012* (HSE 2013); for Scotland, *Scottish Health Survey 2015* (SHS 2016); for Wales, *Welsh Problem Gambling Survey 2015* (WPGS 2016)

\*Note: National breakdown within Great Britain according to most recent available survey data.

## Wales

The 2015 Welsh Problem Gambling Survey was the first attempt to collect population-level data on gambling behaviour for the Welsh population specifically. The methodology used involved face-to-face interviews in the homes of respondents, along with self-completion surveys utilising computer-aided personal interviewing (CAPI) technology. Participants were asked questions regarding their gambling participation over the previous 12 months.

The survey had a sample size of 4,048, and estimated that 61 per cent of the adult population (aged 16 and over) in Wales had undertaken at least one gambling activity over the previous 12 months (63 per cent of men and 59 per cent of women). This fell to 44 per cent after excluding those who had only gambled by playing the national lottery (WPGS 2016). Given that this was the first year that data was collected for the Welsh population alone, it is not possible to compare with previous years.

### 2.3 HOW DO PEOPLE GAMBLE IN GREAT BRITAIN?

There are a large number of ways in which people in the UK are able to gamble. According to the 2010 BGPS, the most prominent means of gambling are the national lottery (59 per cent of people had played over the previous 12 months) followed by other lotteries (25 per cent) and scratch cards (24 per cent) (BGPS 2011). The percentage of the population who play the national lottery was found to have fallen from 65 per cent in 1999 (BGPS 2000), and subsequent Gambling Commission telephone survey data appears to show further reductions in national lottery participation, from 43 per cent in 2013 to 32 per cent in 2015.<sup>8</sup> Similarly, the percentage of adults to have gambled via scratch cards during the previous week decreased from 8 per cent in 1999 to 6 per cent in 2010 (BGPS 2011). While some traditional forms of gambling appear, therefore, to be becoming less popular, other, more modern gambling activities are becoming more prevalent.

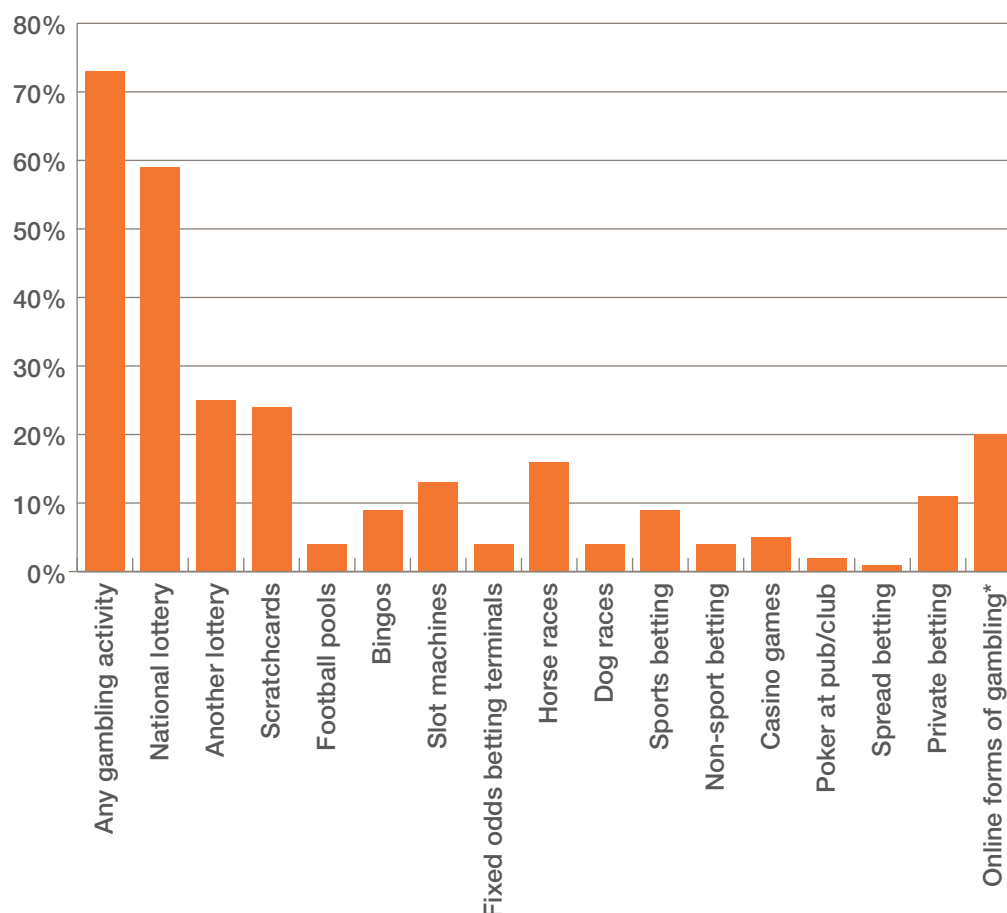
In 2015, there were 147 casinos in Great Britain. This number has stayed relatively stable in recent years, although there has been an observable increase in the size of casinos following changes brought about by the Gambling Act 2005 (Gambling Commission 2015a). With larger casinos comes a larger number of gaming machines on a single site. Partly as a result of these changes, the number of people visiting casinos has increased significantly in recent years, from 18.2 million (April 2011–March 2012) to 30 million (April 2014 to March 2015) (ibid).

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<sup>8</sup> As well as population-level survey data listed above, the Gambling Commission conducts regular telephone and online surveys to get a picture of the extent of the British population's gambling over the previous four weeks (rather than the previous 12 months).

**FIGURE 2.3**

**Brits participate in a wide range of gambling activities, but after lottery-related gambling online gambling is becoming increasingly prevalent**  
*Percentage of British adult population to have participated in gambling activities over the previous 12 months*



Source: *British Gambling Prevalence Survey 2010 (BGPS 2011)*

\*Note: Online forms of gambling include: online bets on horse races, dog races, other sports or non-sports events with a bookmaker or betting exchange. Also includes using the internet to play the national lottery, other lotteries, bingo, football pools, casino games and online slot machine style games.

### **Fixed odds betting terminals (FOBTs)**

Fixed odds betting terminals (FOBTs) are a type of electronic gaming machine on which players bet on the outcome of various simulated games and events (such as roulette, blackjack and bingo), with the odds offered being fixed from game to game. Their introduction into high-street bookmakers has come about since the early 2000s, and was largely a result of ambiguity as to whether they were categorised as a ‘soft’ or ‘hard’ form of gambling (only the latter of which were restricted to casinos by the Gaming Act (1968)). The Gambling Act (2005) described how the slowness of legislation to catch up with new forms of gambling had led to ‘some “harder” forms of gambling ... permitted in traditionally “softer” locations’. This was largely

thought to be referring to the increased number of FOBTs on the British high street.

By 2012, the parliamentary Culture, Media and Sport committee reported that there were 30,000 FOBTs in use on the British high street.

Following public and parliamentary concern over the maximum stake on a single bet on a FOBT (£100), and the frequency with which successive bets could be made (every 20 seconds), the Gaming Machine (Circumstances of Use) (Amendment) Regulations (2015) were introduced. These regulations mean that individuals who want to stake over £50 on a FOBT must now load cash via staff interaction or use account-based play. These changes were intended to encourage greater player control and decision-making.

In October 2016, the government announced that the DCMS would lead a new triennial review (the only legal process by which the stakes and prizes on gaming machines can be modified). The review will have a particular focus on FOBTs, and will aim to explore their impact on individuals and communities.

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Alongside casinos and FOBTs, gambling online is also thought to be becoming increasingly prevalent. Between December 2008 and December 2014, online gambling participation was found to have increased by around 50 per cent, rising from 9.7 per cent of the population to 15.4 per cent (Gambling Commission 2015b). Online gambling now accounts for 29 per cent of the overall gambling market share (Gambling Commission 2015a), and the total annual revenue from gambling software increased by 278 per cent between 2012 and 2015, from £107 million to £404 million (ibid).

#### **2.4 DO SOME GROUPS GAMBLE MORE THAN OTHERS?**

Gambling prevalence is not split evenly among all groups. According to the 2010 BGPS, gambling prevalence rates are highest among individuals whose highest educational attainment is GCSEs or equivalent (76 per cent); individuals who are in paid work (78 per cent) and individuals with relatively high personal income (79 per cent of those within the fourth income quintile, and 76 per cent of those within the fifth). Men are also more likely than women to gamble (75 per cent compared to 71 per cent) (BGPS 2011). This suggests that the likelihood of an individual choosing to gamble is associated positively with their income, but negatively with their level of education. Gambling prevalence would also appear to be determined, in part, by age. It is lowest in the youngest and oldest age groups, and peaks among 44–64-year-olds.

There are, though, exceptions to these general trends when different means of gambling are looked at individually. For example, FOBT use is highest among 16–24-year-olds (12 per cent having played over the previous year compared with 0 per cent for those over 65), the unemployed (12 per cent, compared to 5 per cent of those in employment) and low earners (7 per cent of those in the lowest income quintile, compared to 4 per cent of those in the highest) (BGPS 2011).

The extent of gambling among different age groups, and among groups with different socioeconomic and educational characteristics, is associated with the different attitudes to gambling held by these groups. For example, the 2010 BGPS recorded an increase since 2007 in positive attitudes towards gambling held by those aged 55 and over, with a corresponding increase in gambling participation among this age group also observed over the same period.

Overall, more people have a negative rather than positive attitude towards gambling, with the average view being that ‘gambling is more harmful than beneficial and should not be encouraged’ while also asserting individuals’ right to gamble should they wish (BGPS 2011).

## **2.5 SUMMARY**

In this chapter, we have seen how the ‘responsible gambling’ agenda has evolved over recent years alongside policy changes which have helped to shape the extent and nature of gambling behaviour in Great Britain. Between 61 and 73 per cent of adults in Great Britain gamble to some degree according to the most recent population-level survey data, although this falls to between 43 and 56 per cent when gambling via the national lottery is excluded.

It is likely that legislative and policy changes, which have facilitated a growth in the visibility and availability of some forms of gambling (such as online sports betting, FOBTs and gambling in casinos), have contributed to a gradual shift in the British population’s gambling behaviours. The most recent survey data tells us that some groups – such as men, the middle-aged, people with relatively high incomes, and people with relatively low levels of education – are more likely to gamble than others. There are, however, exceptions to these general trends, with young people more likely to gamble via FOBTs, for instance. It is therefore important to consider how changes to the relative scale of gambling behaviours may also lead to changes in those groups who are more or less likely to gamble in coming years.

## 3.

# PROBLEM GAMBLING

The prevalence of gambling is widespread in Great Britain, with the majority of the population having gambled over the previous 12 months according to existing studies. However, like some other forms of potentially addictive behaviours, only a subset of the overall population of gamblers go on to encounter adverse outcomes as a result of their gambling. This chapter explores this subset in greater detail, as it is only the association with these individuals – problem gamblers – for which the costing exercise to follow will examine excess fiscal costs to government.

We start by setting out how problem gambling is defined, and how it is measured, along with ‘at-risk’ gambling, within British population-level surveys. We then examine what this survey data tells us about the extent of problem gambling within the British population, how this has changed over time, and whether problem gamblers share certain characteristics, which will help us to understand how we should consider the range of negative social outcomes that problem gamblers are likely to encounter above the average rate.

### 3.1 DEFINING AND MEASURING PROBLEM GAMBLING

Problem gambling is defined as ‘gambling to a degree that compromises, disrupts, or damages family, personal or recreational pursuits’ (Lesieur and Rosenthal 1991).

There are two predominant screening instruments used to measure problem gambling: the Diagnostic and Statistics Manual of Mental Disorders (DSM) and the Problem Gambling Severity Index (PGSI).

The DSM is a screening tool that can be used to test for a wide range of conditions and disorders (from cognitive disorders like dementia and psychosis to substance-related disorders like alcoholism and substance misuse). The fourth edition (DSM-IV) assesses an individual according to their answers to questions pertaining to a set of 10 diagnostic criteria. Based on their answers, the individual receives a total score of between 0 and 10.<sup>9</sup>

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<sup>9</sup> While the DSM-IV is the most commonly used version of this particular screening tool used in UK studies, some researchers have begun to use the most recent edition: DSM-5 (Stinchfield 2003, Petry 2010). There are three significant differences between the two. First, DSM-IV reclassifies problem gambling as a ‘substance-related disorder’ rather than an ‘impulse control disorder’, bringing it more closely into line with the medical descriptors used for other addictive behaviours, such as alcoholism and substance misuse. Second, DSM-5 introduces a specific time period (the previous 12 months) in which the 10 criteria must be evidenced in order to be satisfied (DSM-IV has no such requirement) (Stinchfield 2003). Third, unlike DSM-IV, DSM-5 does not include criminal acts related to gambling as a criteria, which has implications for the identification and diagnosis of problem gamblers.

When used to identify problem gambling, the 10 DSM criteria used to determine whether an individual meets the threshold for being classified a problem gambler are as follows. They test whether the individual:

- is preoccupied with gambling
- needs to gamble with increasing amounts of money
- has undergone repeated unsuccessful efforts to control, cut back, or stop
- is restless or irritable when attempting to cut down or stop
- gambles as a way of escaping problems or dysphoric mood
- chases losses
- lies to conceal the extent of involvement with gambling
- has committed illegal acts to finance gambling
- has jeopardized or lost a relationship or job
- relies on others to provide money to ‘bail them out’ or relieve a desperate financial situation.

Given that the DSM can be used to test for forms of addiction other than problem gambling, there has been debate about where the threshold at which an individual is classified as a problem gambler should be set. UK studies using DSM-IV have usually opted to set this minimum threshold at a score of 3 out of 10. For example, all three BGPS studies have used this threshold, and justified this according to the extent to which it discriminates evenly between the 10 criteria and the fact that it is deemed to provide the closest match to prevalence estimated by alternative screens also used in the BGPS series (BGPS 2011: 74). Other studies (Lakey et al 2007, Slutske et al 2011, Jazaeri and Habil 2012) have opted to set the threshold for being identified as a problem gambler at a score of 5 on the DSM, although this score is usually reserved for pathological gamblers.<sup>10</sup>

The Problem Gambling Severity Index (PGSI) was developed for use among the general population, rather than within a clinical context.<sup>11</sup> Unlike the DSM, it was designed specifically to diagnose problem gambling, rather than addictive behaviour more broadly. It consists of a set of nine items which are each assessed on a four-point scale: never (0), sometimes (1), most of the time (2), almost always (3). The points generated by an individual’s responses to questions relating to each of the criteria are added together to give a total score ranging from 0 to 27. The higher the cumulative score, the greater the risk that an individual’s gambling behaviour is problematic. The minimum threshold for an individual being defined as a problem gambler according to the PGSI is set at 8.

The PGSI asks nine questions to determine the extent of an individual’s (problem) gambling:

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10 Pathological gambling is defined as an ‘impulse control disorder that is a chronic and progressive mental illness’ (Jazaeri and Habil 2012), and so considered to be more severe than problem gambling.

11 The DSM-IV was developed as a diagnosis tool across addiction types, and, unlike the PGSI, was not validated with the general population. The PGSI screening tool was specifically developed for use among the general population rather than within a clinical context. As such, it was tested and validated within a general population survey of over 3,000 Canadian residents in 2001. The PGSI has been subject to critical evaluation and was revised in 2003.

1. Have you bet more than you could really afford to lose?
2. In the last 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement?
3. When you gambled, did you go back another day to try to win back the money you lost?
4. Have you borrowed money or sold anything to get money to gamble?
5. Have you felt that you might have a problem with gambling?
6. Has gambling caused you any health problems, including stress or anxiety?
7. Have people criticised your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
8. Has your gambling caused any financial problems for you or your household?
9. Have you felt guilty about the way you gamble or what happens when you gamble?

### 3.2 AT-RISK GAMBLING

As well as differentiating between problem gamblers and non-problem gamblers, some screening tools are also able to classify individuals as at-risk gamblers, defined as those who may experience gambling-related harm without loss of control, or experience loss of control without harm (BGPS 2011).

As we have seen, the DSM-IV metric does not contain an in-built threshold for problem gamblers, and so similarly does not include a minimum threshold for when an individual is classified as at risk. In the case of the BGPS, though, an individual who scores 1–2 out of 10 is deemed to be at risk.

The PGSI metric does, however, have an in-built threshold for at-risk gamblers – a score of 1 to 7 out of 27. Within this, at-risk gamblers are broken down into being either low-risk (a score of 1–2) or moderate risk (3–7).

**FIGURE 3.1**

**Unlike the DSM-IV the PGSI metric has an in-built threshold for at-risk gamblers**

*Gambling risk according to Problem Gambling Severity Index (PGSI)*



Source: British Gambling Prevalence Survey 2010 (BGPS 2011)



### 3.3 PREVALENCE IN GREAT BRITAIN

All studies which have sought to establish the prevalence of problem gambling in Great Britain have used either the DSM or PGSI measures (or a combination of the two). While there is some degree of consistency of results across these studies, there are also some notable differences, which mean that there remains disagreement within the responsible gambling community as to exactly what proportion of the population can be said to be problem gamblers. Below, we compare the most significant surveys which estimate prevalence of problem and at-risk gambling.

#### Great Britain

As we have seen, the BGPS has been undertaken three times, in 1999, 2007 and 2010.<sup>12</sup> In 2007 and 2010, the survey was conducted using both the DSM-IV and PGSI measures, while in 1999 only the DSM-IV measure was used.<sup>13</sup> In the two most recent surveys, both screening tools were used as it was recognised that they may be capturing slightly different individuals and slightly different types of gambling-related problems (BGSP 2011).

**TABLE 3.2**

**There is a general upward trend in rates of problem gambling and at-risk gambling across the three BGPS surveys**

*Percentage of the UK adult population (aged 16 and over) identified as problem and at-risk gamblers (1999, 2007 and 2010 BGPS surveys), according to DSM-IV and PGSI measures*

	1999		2007		2010	
	Problem gambler	At-risk gambler	Problem gambler	At-risk gambler	Problem gambler	At-risk gambler
<b>DSM-IV</b>	0.6	2.9	0.6	4.5	0.9	4.1
<b>PGSI</b>	-	-	0.5	6.5	0.7	7.5

Source: British Gambling Prevalence Surveys 1999, 2007, 2010 (BGPS 2000, BGPS 2008, BGPS 2011)

In 2010, the BGPS estimated rates of problem gambling among the UK adult population at 0.9 per cent (according to DSM-IV) and 0.7 per cent (according to the PGSI). In both cases, this represented a slight increase since 2007, when problem gambling prevalence was found to be 0.6 and 0.5 per cent respectively.

While the PGSI estimate for problem gambling prevalence was below that found using the DSM-IV in 2010, the estimate for the percentage of the population identified as at-risk gamblers was significantly larger (7.5 per cent compared to 4.1 per cent). And while the PGSI figure reflected an increase on 2007, the DSM-IV figure reflected a slight decrease (see figure 3.2).

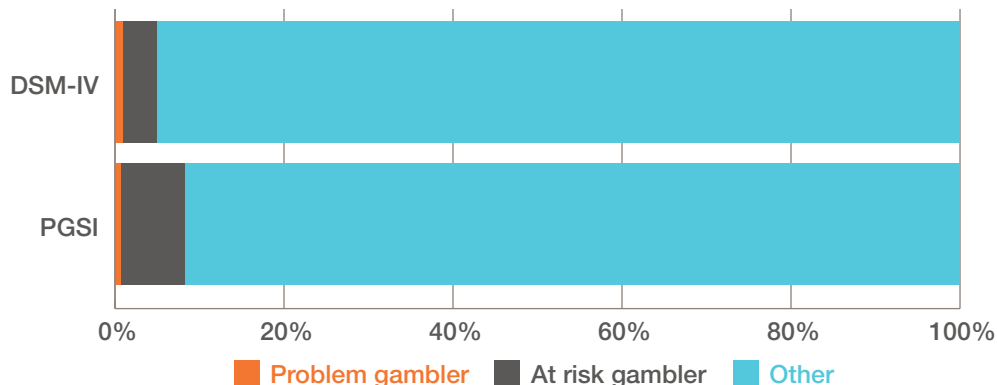
<sup>12</sup> The results of the 2016 BGPS are due to be published in December 2016, and so will serve as a useful comparator to the statistics on the prevalence of problem gambling explored in this section.

<sup>13</sup> The 1999 BGPS used the South Oaks Gambling Screen (SOGS) measure in addition to the DSM-IV. SOGS is used more commonly in US studies of gambling prevalence and behaviour, and so is not detailed in this report.

**FIGURE 3.2**

The percentage of the British population identified as at-risk gamblers is significantly larger according to the PGSI screening tool, compared to the DSM-IV

*Problem gamblers, at-risk gamblers, and all others as a percentage of total adult population of Great Britain (2010)*



Source: British Gambling Prevalence Survey 2010 (BGPS 2011)

Men were found to be significantly more likely to be problem gamblers than women in 2010. According to the DSM-IV measure, men were found to be around five times more likely to be problem gamblers than women according to both the DSM-IV (1.5 per cent compared to 0.3 per cent) and PGSI (1.3 per cent compared to 0.2 per cent).

### England

As we have seen, questions related to gambling prevalence and behaviour were included in the Health Survey for England (HSE) for the first time in 2012. Like the BGPS, this survey used both the DSM-IV and PGSI measures to identify the extent of problem gambling within the English population. From the total sample, 6,791 completed the questions as part of the DSM-IV and PGSI gambling screens.

According to the former, 0.5 per cent were found to be problem gamblers (0.8 per cent of men and 0.2 per cent of women), while for the latter it was slightly less at 0.4 per cent (0.6 per cent of men and 0.1 per cent of women). According to the PGSI, 4.2 per cent of the English adult population were classified as being at risk (6.5 per cent of men and 2.0 per cent of women). No figure for the percentage of at-risk gamblers was given according to the DSM-IV (HSE 2013).

### Scotland

From the total sample of the 2015 Scottish Health Survey, problem gambling screens were completed by 4,081 adults. The results estimated that 0.7 per cent of the Scottish adult population are problem gamblers and 4 per cent are at risk, according to either the PGSI or DSM-IV (SHS 2016).<sup>14</sup> This signalled that there had been no change since the 2012 study, which also estimated rates of problem gambling at 0.7 per cent according to both the DSM-IV and PGSI (SHS 2013).

<sup>14</sup> That is, as long as an individual satisfies the threshold of at least one of the two metrics, they will be counted.

## Wales

The Gambling Commission's analysis of the 2015 Welsh Problem Gambling Survey (WGPS 2016) estimated that 1.1 per cent of the Welsh adult population are problem gamblers according to either the DSM-IV or PGSI (1.9 per cent of men and 0.2 per cent of women), while 4.0 per cent are at-risk gamblers (measured only according to the PGSI).

### 3.4 CHARACTERISTICS OF PROBLEM GAMBLERS

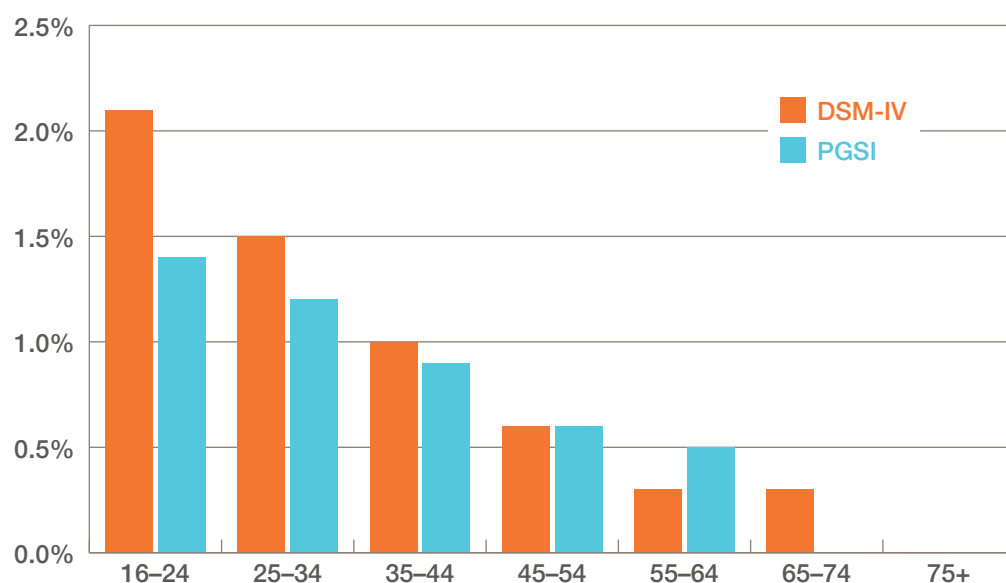
According to the 2010 BGPS, men were five times more likely than women to be problem gamblers, with similar ratios observed in separate English and Scottish surveys (while men were found to be 10 times more likely to be problem gamblers in Wales) (BGPS 2011).

Problem gambling was also found to be associated with age according to the 2010 BGPS. The highest rates were observed among the youngest age groups (2.1 per cent among 16–24-year-olds, and 1.5 per cent among 25–34-year-olds), while the lowest rates were observed among older adults (0.2 per cent of those aged 65 and over) (ibid). Similar patterns were observed in analysis by Wardle et al (2014) of the combined 2012 HSE and SHS datasets. This provides an interesting comparison of data regarding overall gambling behaviour. As we saw in chapter 1, the likelihood of an individual undertaking some form of gambling was lowest among the 16–24 age group (BGPS 2011). So while young people are the least likely to gamble, they are the most likely to be problem gamblers.

**FIGURE 3.3**

#### Prevalence of problem gambling decreases with age

*Problem gambling prevalence by age group as a percentage of entire adult population (aged 16 and above) in Great Britain (2010), according to DSM-IV and PGSI*



Source: British Gambling Prevalence Survey 2010 (BGPS 2011)

Problem gambling was also found to be more prevalent among some ethnic minority groups in the 2010 BGPS. For example, it is higher among those of Asian/Asian British origin (2.8 per cent) and Black/Black British origin (1.5 per cent) compared with those who identify as White/White British (0.8 per cent) (BGPS 2011). These findings were mirrored in the 2012 HSE and SHS findings (Wardle et al 2014).

Problem gambling is also more prevalent among those with lower incomes: 1.8 per cent of individuals in the fourth income quintile were found to be problem gamblers in 2010, compared to 0.6 per cent of those in the first quintile. This is striking as it contrasts with the socioeconomic profile of gamblers taken as a whole. As we saw in chapter 1, those with the lowest personal income are the least likely to gamble, whereas individuals in the top two income quintiles have significantly higher rates of gambling.

### 3.5 COMPARISON ACROSS SURVEYS

As we have seen, there is a degree of variation among the results of population-level surveys with regards to rates of problem gambling within the British population. Figure 3.4 compares the rates of problem and at-risk gambling across the 2010 BGPS, 2012 HSE, 2015 SHS and 2015 WPGS, using both the DSM-IV and PGSI (where available). We can see how rates of problem gambling are estimated across a range of 0.4–1.1 per cent of the adult population, while rates of at-risk gambling are estimated consistently at 4 per cent of the population (with one outlier).<sup>15</sup>

It is possible that the observed variation in rates of problem gambling across the surveys is reflective of disparities in rates of problem gambling between England, Scotland and Wales. For example, it could be the case that someone in Wales is almost three times more likely than someone in England to be a problem gambler, as the above data would appear to suggest. We would expect disparities to exist where the population of England, Scotland and Wales have significantly different likelihoods of possessing characteristics that we have observed as being associated with problem gambling in some way, such as ethnicity and income. However, in reality, the socioeconomic and demographic profiles of the English, Scottish and Welsh populations are not so different as to suggest that such vast disparities in rates of problem gambling should exist. For example, in 2012 mean gross weekly earnings in England, Scotland and Wales were £512, £498, £455 respectively (ONS 2013). Alternatively, we might expect to see significant disparities in rates of problem gambling if the legislative framework underpinning access to gambling were varied across British countries. However, as we saw in chapter 1, the legislative framework is largely consistent across Great Britain. This is true right down to the local level, where local authorities, or licensing boards in the case of Scotland, grant gambling licences.

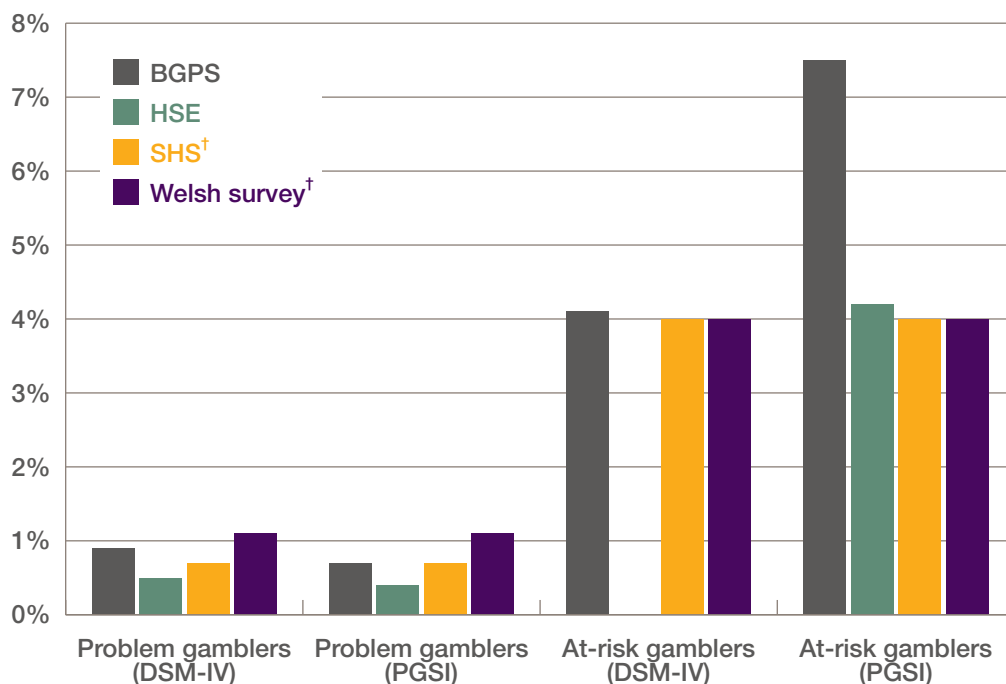
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<sup>15</sup> Note that for the 2015 SHS and the 2015 WPGS, both problem and at-risk gamblers were identified whenever an individual met the criteria of the DSM-IV or PGSI (that is, an individual could meet the threshold in either metric, or both). It is therefore not possible to separate the DSM-IV and PGSI results for these two surveys, and they are represented as identical in figure 3.4. In addition, the 2012 HSE did not collect data on at-risk gambling prevalence according to the DSM-IV.

**FIGURE 3.4**

Rates of problem gambling vary according to survey and screening tool, while rates of at-risk gambling are more consistent, with one significant exception.

*Problem and at-risk gambling across the four major population-level surveys in Great Britain, as a percentage of the adult (aged 16 and over) population, according to DSM-IV and PGSI screening tools*



Source: British Gambling Prevalence Survey 2010 (BGPS 2011), Health Survey for England 2012 (HSE 2013), Scottish Health Survey 2015 (SHS 2016), Welsh Problem Gambling Survey 2015 (WPGS 2016)

\*Note: in these surveys 'problem gamblers' and 'at-risk gamblers' were counted whenever they met the criteria for DSM-IV or/and PGSI.

<sup>†</sup>In the SHES and Welsh Survey, 'problem gamblers' and also 'at risk' were counted whenever they met the criteria for DSM-IV or/and PGSI

It is therefore reasonable for us to believe that the variation we observe in figure 3.4 is attributable, at least in part, to variations in the ways in which the data was collected across the surveys. For instance, respondents may have been motivated to give 'socially desirable' (and potentially dishonest) answers to survey questions, and so underestimate the extent of their gambling behaviour. There is a particular risk that surveys framed explicitly as 'gambling surveys' such as the 2010 BGPS and 2015 WPGS might attract a disproportionately high number of gamblers, while more generic surveys might more accurately reflect levels and types of gambling within the population at large (Williams and Volberg 2009). It is feasible that response bias may have skewed the results in some surveys. Indeed, we can see from figure 3.4 that the 2010 BGPS and 2015 WPGS do report the highest rates of problem gambling among the four surveys we have encountered here.

### 3.6 SUMMARY

This chapter has explored what the most recent population-level survey data tells us about problem and at-risk gambling in Great Britain. Rates of problem gambling range from between 0.4 and 1.1 per cent of the British population, while rates of at-risk gambling are around 4 per cent. Men are five times more likely than women to be problem gamblers, and problem gamblers are also particularly likely to be under 25 and to have low incomes, in direct contrast to the population of non-problem gamblers. A picture of problem gamblers in Great Britain is, therefore, beginning to emerge. In chapter 4, we will add further layers to this picture, in order to prepare us to select which areas of public service provision and other areas of government expenditure are included in our costing exercise to establish the excess fiscal cost associated with individuals who are problem gamblers.

## 4.

# THE EFFECTS OF PROBLEM GAMBLING ON INDIVIDUALS

We have seen how problem gamblers often share certain socioeconomic and demographic characteristics, such as having low incomes or being aged under 25. They can also be more likely to engage in certain risky behaviours or lifestyle choices, or to experience a range of other comorbid problems which may affect their health, wellbeing, relationships and financial security.

In this chapter, we explore what treatment-level data and existing studies tell us about these comorbidities within the British context. Fusing this evidence with the best available evidence from international studies, this will inform which areas of public service provision and other areas of government cost are included in the costing exercise to follow in chapter 5.

### 4.1 THE VIEW FROM THE GROUND

Langham et al (2016) define gambling-related harm as ‘any initial or exacerbated adverse consequence due to an engagement with gambling that leads to a decrement to the health or wellbeing of an individual, family unit, community or population’. As we have seen from the ways in which the DSM and PGSI measure problem gambling, individual problem gamblers are defined, in part, by the fact that they are more likely to encounter these adverse consequences as a result of their gambling.

In recognition of the extent of comorbid problems associated with problem gambling, there are some statutory and voluntary services available to problem gamblers in Great Britain. The four predominant services are outlined below.

#### **NHS National Problem Gambling Clinic**

The NHS National Problem Gambling Clinic (NPGC), based in North London as part of the Central and North West London NHS Foundation Trust, is the only specialist NHS clinic dedicated to treatment provision for problem gamblers in the UK. The clinic, which provides treatment to problem gamblers living in England and Wales, sees between 750 and 900 patients every year (Gentleman 2016). Patients usually self-refer into the service, after which they receive an initial assessment of need, before potentially receiving up to eight sessions of individual or group cognitive behavioural therapy (CBT). The NPGC also provides:

- a safe and confidential place to talk
- a regular support group with other gamblers
- financial advice and money management help
- advice on employment, and social and relationship difficulties
- practical and emotional support for the family or friends of problem gamblers.

## **GamCare**

GamCare provides information, advice, support and counselling for the prevention and treatment of problem gambling. Gamcare administers the National Gambling Helpline, which provides non-judgemental advice and support to problem gamblers and their affected friends and family, all of whom are entitled to remain anonymous. After people get in touch via the helpline, Gamcare are able to signpost them to a range of services including the Samaritans and Step Change. The helpline provides an important ‘crisis management’ service, and can help people who both want to stop gambling immediately and those who just want to get their gambling behaviour under control.

The helpline can also provide a pathway into treatment, in the form of counselling underpinned by the principles of ‘psychodynamic’ therapy, delivered by Gamcare in collaboration with 15 partner agencies from across England. Individuals are entitled to receive up to 12 sessions. Counselling sessions aim to understand the cause of an individual’s problem gambling, the behaviours related to problem gambling, and the consequences of those behaviours. The Gamcare ‘forum’, meanwhile, provides an online safe space for people affected by gambling to support one another.

Gamcare also has an ‘education and prevention’ function, which aims to raise awareness and minimise incidence of problem gambling. There is a particular focus on providing support and advice to young people and other groups (for example, through the Big Deal website for teenagers affected by problem gambling).

## **The Gordon Moody Association**

The Gordon Moody Association provides specialist, residential support and treatment for severe problem gamblers, who often have deeper, more complex problems than is the case for those who access services provided by the NPGC or Gamcare. Between April 2014 and March 2015, 131 people accessed this treatment across two residential centres (one in the West Midlands and the other on the Kent/London border) (Gordon Moody Association 2015). A residential treatment programme usually lasts for 12 weeks, and is preceded by 2-week residential assessment. Once the 12-week treatment period is over, service users remain able to access halfway-house accommodation and relapse prevention support for up to three months.

The Gordon Moody Association also offers additional services, including: outreach support for ex-residents (provided face-to-face and online); online support for residents’ friends and families; a ‘gambling therapy’ service providing online advice, information and support to non-resident problem gamblers; and an individual treatment programme for female problem gamblers (piloting a combination of group, residential and weekly one-to-one counselling).

## **Gamblers Anonymous**

Gamblers Anonymous organises peer-support meetings for problem gamblers and their affected friends and family all over the UK, hosting over 170 meetings per week. These open and voluntary meetings are intended to help problem gamblers to regain control of their gambling



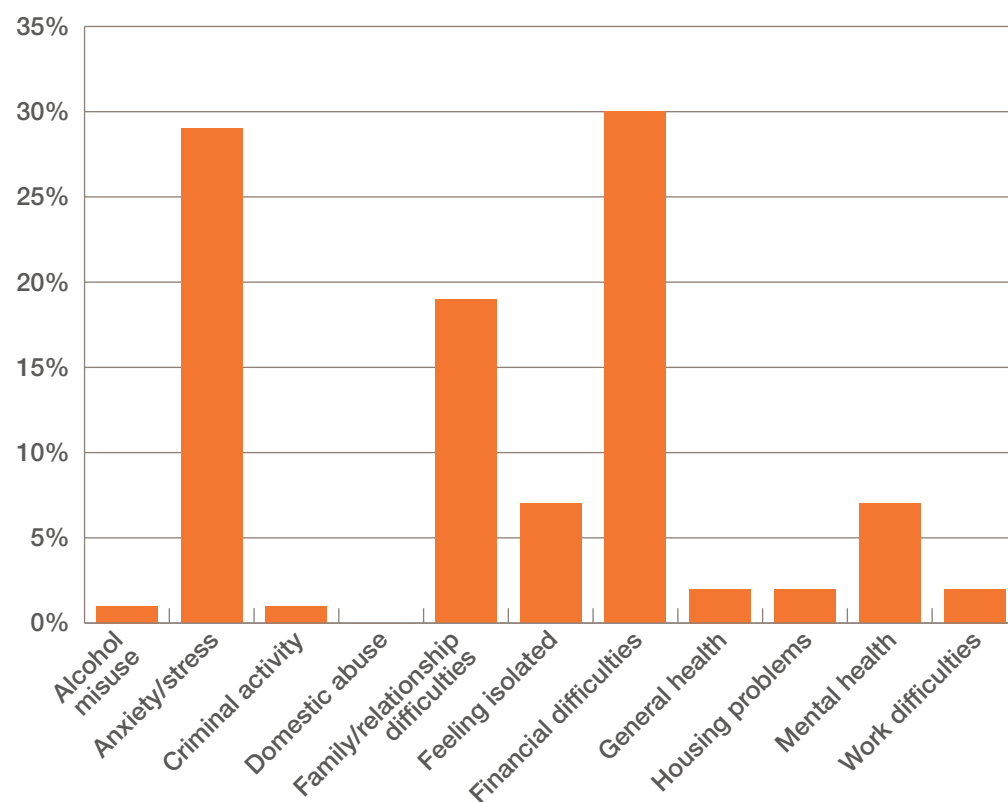
behaviour, through an abstinence-based recovery model. Gamblers Anonymous stipulates that the only requirement for access to its services is a desire to stop gambling altogether (putting it in contrast with the approach adopted by Gamcare). Peer-support meetings are, therefore, modelled in part on a 12-step programme similar to that used in other abstinence-based recovery programmes, such as Alcoholics Anonymous. Peer-support meetings encourage problem gamblers to examining past mistakes with the help of a ‘sponsor’ (an experienced member of the group), and to adopt a new ‘code of behaviour’ to help prevent engaging in gambling thereafter.

In addition to peer-support meeting, Gamblers Anonymous operates an online forum and chatroom to provide remote support to problem gamblers and their families.

**FIGURE 4.1**

**Financial difficulties, anxiety and relationship difficulties are the most self-reported impacts of problem gambling**

*Percentage of calls to Gamcare’s National Gambling Helpline to have self-reported ‘impacts’ of problem gambling (2015/16) (n=48,234)*



Source: Gamcare, ‘Annual Statistics 2015/16’ (Gamcare 2016)

Note: n = the number of ‘impacts’ talked about during the calls to the helpline. The number of calls was 46,851 but a caller may talk about two major ‘impacts’ in a particular call.

It is possible to develop an initial understanding of some of the comorbid problems associated with problem gambling from the data collected by some of these treatment providers. For example, figure 4.1 outlines the most common, self-reported problems disclosed by callers to Gamcare’s

National Gambling Helpline in 2015/16 (described here as ‘impacts’ of problem gambling).

In order to build up a clearer idea of comorbidity ‘groupings’, we categorised these impacts in the following way:

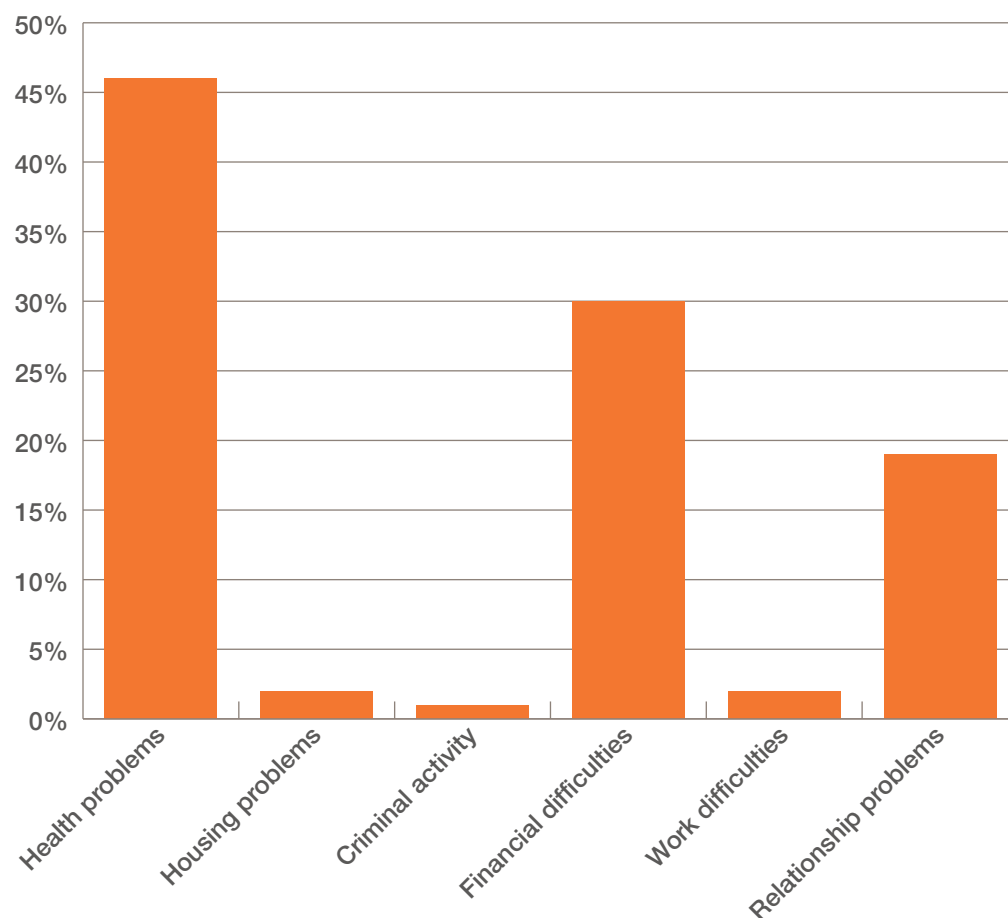
- **health problems** (alcohol misuse; anxiety/stress; feeling isolated; general health; mental health)
- **housing problems** (housing problems)
- **criminal activity** (criminal activity)
- **financial difficulties** (financial difficulties)
- **work difficulties** (work difficulties)
- **relationship problems** (domestic abuse; family/relationship difficulties).

This creates the split set out in figure 4.2.

**FIGURE 4.2**

Health problems, financial difficulties and relationship problems are three prominent categories into which self-reported impacts of problem gambling fall

*Percentage of calls to Gamcare’s National Gambling Helpline to have self-reported ‘impacts’ of problem gambling (2015/16) (n=48,234)\**



\*Source: IPPR grouping of data from Gamcare, ‘Annual Statistics 2015/16’ (Gamcare 2016)

Note: n = the number of ‘impacts’ talked about during the calls to the helpline. The number of calls was 46,851 but a caller may talk about two major ‘impacts’ in a single call.

An examination of this data shows that three groups of ‘impacts’ stand out: health problems (including both physical and mental health problems), were self-reported in 46 per cent of calls; financial difficulties in 30 per cent; and relationship problems in 19 per cent.

These groupings provided the basis for which our review of the academic literature, in order to further determine the extent of associations between individuals who are problem gamblers and encountering adverse impacts. The results of this review are summarised below.

## **4.2 HEALTH PROBLEMS**

### **Lifestyle/health risk factors**

The 2010 BGPS shows that problem gambling is associated with the presence of several lifestyle/health risk factors. For example, rates of problem gambling were higher among cigarette smokers than non-smokers (1.9 per cent compared to 0.6 per cent), and higher among heavy drinkers than moderate drinkers (2.4 per cent of individuals who reported drinking 20 units or more on at least one day during the previous week were identified as problem gamblers, compared to 0.6 per cent of those who reported drinking 1–4 units) (BGPS 2011). In keeping with our findings on the characteristics of problem gamblers from chapter 3, these behaviours are more prevalent among more disadvantaged socioeconomic groups.

Findings such as these are supported by the wider literature. For example, Griffiths et al (2010) found an association between levels of self-reported gambling-related problems and at-risk levels of alcohol consumption in the UK, which parallels conclusions found in similar studies internationally (Lorains et al [2011], Cunnigham-Williams et al [1998], Afifi et al [2010], Abbott and Volberg [1992], Dickerson et al [1996]). Similarly, while causality can only be inferred, Sussman et al (2011) have suggested that the social context associated with high rates of gambling may increase the risk of developing tobacco, alcohol and other drug addictions.

### **Mental health problems**

There is also evidence that problem gambling can be associated with the presence of mental health problems. An example of such findings comes from combined analysis of the 2012 HSE and SHS findings (Wardle et al 2014). Using the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), this study found problem gambling to be significantly more prevalent among individuals with a low WEMWBS score (2.2 per cent) compared to those who had a wellbeing score not considered to be low (0.3 per cent). In fact, an individual’s WEMWBS score was found to be so highly associated with the presence of problem gambling that an individual who fell into the lowest 10 per cent of WEMWBS scores was found to be eight times more likely to be a problem gambler than those who did not fall into the lowest 10 per cent.

Additionally, using data from the 2007 Adult Psychiatric Morbidity Survey (McManus et al 2009), Cowlshaw and Kessler (2015) found problem gambling to be associated with high suicidal ideation in the UK (19 per cent in the past year, compared to 4 per cent among those with no gambling

problems). Mental-health-related comorbidities such as this are commonly assumed to arise as a result of the losses incurred from gambling and the debt and legal problems that can follow, which can then precipitate hopelessness and contemplation of suicide as an escape (Battersby et al 2006). This mirrors the findings from international studies. For example, the Australian Productivity Commission found that around 60 per cent of individuals with gambling problems indicated that they had suffered depression as a result of gambling, and around 9 per cent had considered suicide. The commission concluded that ‘there can be little doubt that there are suicides linked to gambling – it probably lies somewhere between 35 and 60 a year’ (APC 1999).

### **Physical health problems**

Similarly, Cowlshaw and Kessler (2015) observed correlations between problem gambling and some types of physical health problems, such as elevated rates of high blood pressure, digestive problems and liver problems. However, these can often be attributed to the presence of a comorbid condition (such as alcohol addiction), rather than a direct link between problem gambling and physical ill-health (ibid). As such, alcoholism and substance misuse could be considered to be precursors to problem gambling, which, when suitably severe, then act to exacerbate the effects of pre-existing health conditions (ibid). In the case of hospital access, Cowlshaw and Kessler (2015) suggest that problem gambling can distract from the presence of emerging health conditions and increase the likelihood of reaching crisis point before treatment is sought, which prolongs care and increases cost of treatment. As such, problem gambling could reasonably be said to be an exacerbating factor, if not a primary cause, of health conditions leading to hospital visits.

It is worth noting that while findings linking the presence of problem gambling to health and wellbeing problems are widespread, they are not universal. For example, combined analysis of the 2012 HSE and SHS findings by Wardle et al (2014) did not find problem gambling to be correlated by alcohol consumption, measures of general health status, or the presence of a longstanding illness.

### **4.3 HOUSING PROBLEMS**

Sharman et al (2014) conducted the first attempt to establish the extent of association between problem gambling and homelessness in the UK, using a sample of 456 people using homelessness services across London. The study found homeless people to be significantly more likely to be problem gamblers (this is explored in more detail in chapter 5). It found that certain gambling behaviours, such as playing FOBTs and betting on sports and horse racing, were particularly popular among this group, and that having access to a warm environment may also be a significant factor in drawing the homeless into high-street bookmakers.

There is also emerging international evidence on this issue. For example, a 2014 Canadian study of 264 people accessing homeless services found 25 per cent to have reported past problems with problem gambling (eight times the national average) (Matheson et al 2014). Similarly, the US National Gambling Impact Study Commission found that 18 per cent of a sample of

1,100 homelessness service users identified problem gambling as a primary cause of their homelessness (NGISC 1999).

#### 4.4 CRIMINAL ACTIVITY

Problem gamblers are, unsurprisingly, often associated with ‘gambling-related crime’, defined as: ‘a criminal offence committed by a gambler or partner to fund his or her gambling either directly and/or indirectly to fund a shortfall of living expenses due to gambling’ (Blaszczynski 1994). Using a sample of 178 patients at the NHS National Problem Gambling Clinic, Bowden-Jones (2012) found that:

- 39 per cent had a history of custodial sentences (of which 50 per cent were convicted of common assault and 16 per cent of domestic violence)
- 61 per cent had no criminal record and yet 83 per cent of these disclosed committing an illegal act to fund their gambling once asked directly
- 14 per cent had conducted criminal acts against their employer (all involving either theft or fraud).

Despite the small sample size and the fact that it is drawn from individuals accessing gambling-related treatment (a point which we will explore in more detail in chapter 5), this data gives a clear indication of some degree of association between problem gambling and criminal activity.

May-Chahal et al (2012) estimated that 8 per cent of prisoners are problem gamblers (10 per cent of men and 6 per cent of women) – significantly higher than the rate among the general population – while 5 per cent of male and 3 per cent of female prisoners considered that the offence for which they were currently imprisoned was linked to gambling. Also, 46 per cent of male and 37 per cent of female prisoners considered gambling to have caused problems for fellow prisoners (ibid). As we saw in chapter 3, the PGSI contains an item asking whether a respondent has ever committed a crime in order to finance gambling or to help pay off gambling-related debts. In the sample 13 per cent of male and 7 per cent of female prisoners reported having committed a crime to finance gambling or pay off debts.

International studies also point to the extent of overlap between problem gambling and criminal activity. For example, it is estimated that problem gamblers in Australia are up to seven times more likely to be arrested than non-gamblers (Doley 2000), while a study in 1999 by the National Opinion Research Center (NORC) of 3,481 people from across the US found 23 per cent of pathological and 13 per cent of problem gamblers to have been imprisoned at some point in their lives (see Gerstein et al 1999). As a result, the National Gambling Impact Study Commission estimated pathological and problem gambling to account for \$1,000 in excess lifetime police costs per person (NGISC 1999). Furthermore, a review of the international evidence suggested that while prisoners are less likely to gamble than the general population, problem gamblers are disproportionately represented among those prisoners who do gamble (Williams et al 2005).

#### 4.5 FINANCIAL DIFFICULTIES

Existing British studies demonstrate a relationship between being a problem gambler and financial hardship, with the severity of the financial difficulties encountered by an individual correlating positively with the severity of their problem gambling. For example, using population-level survey data from England and Scotland, Wardle et al (2014) found 34 per cent of problem gamblers to report having financial difficulties rated as more severe than 'slight', compared to 23 per cent of at-risk gamblers and 10 per cent of non-gamblers. Similarly, problem gamblers were found to be more than three times as likely to report being in debt compared to non-gamblers (38 per cent and 12 per cent respectively). Unsurprisingly, the study also found problem and at-risk gamblers in low- and middle-income groups to be more likely to experience being in debt over the previous 12 months compared to those in high-income groups. This is particularly important given that we know problem gamblers are more likely to have lower incomes.

A UK study of visitors to casinos found that 65 per cent of the 'problem' players had been forced to turn to others to relieve a desperate financial situation caused by gambling, whereas none of the 'social' players had been required to do so (Fisher 1996). In addition, 52 per cent of the 'problem' players reported having sold possessions to pay gambling-related debts, compared with 2 per cent of the 'social' players, and 25 per cent of 'problem' players reported having had committed illegal acts to gamble or pay gambling-related debts, compared with 1 per cent of 'social' gamblers.

In 2008, problem gamblers receiving treatment from GamCare in the UK were found to be, on average, in £22,000 worth of debt (Gamcare 2008). This compares to average UK household debt (excluding mortgages) of £9,633 in that year.<sup>16</sup>

Findings such as these are supported by the international evidence also. For example, the 1999 NORC study found that 90 per cent of problem gamblers in the US reported gambling with their pay cheques or family savings; over 60 per cent reported borrowing money from friends and relatives to avoid credit problems; and 60–70 per cent reported having become indebted (see Gerstein et al 1999). Relatedly, the same study found over 20 per cent of problem gamblers in the US to eventually file for bankruptcy as a result of their gambling losses, five times the rate for non-problem gamblers (ibid). Similarly, in 2003 it was estimated that 2,900 Australians declare bankruptcy each year due to gambling losses (Brading 2003).

#### 4.6 WORK DIFFICULTIES

There is a gap in the existing UK-based academic literature regarding the extent to which problem gamblers are affected by work difficulties, most notably regarding the extent to which they might fall into unemployment and onto out-of-work benefits.

However, international evidence suggests that, in keeping with the problems reported to treatment providers in the UK, there is relationship between problem gambling and individuals experiencing work-related problems.

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<sup>16</sup> <http://themoneycharity.org.uk/money-statistics-archive/>

For example, the National Opinion Research Center found that 61 per cent of problem gamblers reported missing work to gamble; 59 per cent reported difficulty concentrating at work due to a preoccupation with gambling and gambling debts; 50 per cent reported *almost* losing their jobs due to gambling; and 36 per cent reported *actually* losing their jobs (see Gerstein et al 1999). Similarly, an Australian study estimated the social cost involved with productivity loss among problem gamblers to be between \$AU28–299, and the cost involved with job change among problem gamblers to be \$AU59.

#### 4.7 RELATIONSHIP PROBLEMS

Griffiths (2006) notes how relationship problems experienced by problem gamblers can include conflict with friends, family and colleagues, as well as the breakdown of relationships, which can culminate in separation or divorce. This is illuminated by a few pieces of UK data (taken from small sample sizes) that are able to allow us to get a clearer picture of what problem gamblers mean when they report to Gamcare the presence of relationship problems. For example, among the sample of 178 patients at the NHS National Problem Gambling Clinic 9 per cent reported that they had been violent towards a family member (Bowden-Jones 2012).

The international evidence also supports the presence of an association between problem gambling and relationship problems. For example, problem gamblers in Australia have been found to be six times more likely to be divorced than non-problem gamblers (Thomas and Jackson 2008). Relatedly, the Australian Productivity Commission estimated the social cost involved with divorce among problem gamblers to be \$AU417–1,120, and the cost involved with familial distress to be \$AU756–2,933 (APC 1999).

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#### Understanding causality

First, it is not possible from the literature to establish the extent to which problem gambling has *caused* problem gamblers to access services at a rate above that of non-problem gamblers. In the absence of existing studies, and in order to help us understand the extent of causal relationships between problem gambling and the presence of supposed ‘impacts’, we devised a short survey that was completed by five UK-based academics with expertise on problem gambling.

Respondents were asked to provide their own judgement on the extent to which problem gambling is a causal factor determining increased demand for some of the services we have explored above. They were able to rank the extent of causality according to a score of 0 to 5.

The responses support the conclusion that it is not possible to establish causality. For each of the areas of interaction that were tested, there was no consensus on the extent of any causality derived from the presence of problem gambling. For example, when asked to consider the extent to which problem gambling causes an increased likelihood of arrest, two respondents argued that there is very little causal relationship (0–1), while another two argued there was a mid-level relationship (2–3), and another argued that there is a very strong relationship (4–5). One respondent commented that ‘the effort to quantify causation ... raises obvious problems and could make claims and conclusions vulnerable to criticism’.

Taking into account the lack of existing studies proving causality, and related absence of academic consensus, this study makes no attempt to claim that excess fiscal costs incurred by problem gamblers are directly *caused* by problem gambling. Instead, we can say only that they occur alongside, and are *associated with*, one another.

#### 4.8 WHICH INTERACTIONS CAN BE INCLUDED IN A COSTING EXERCISE?

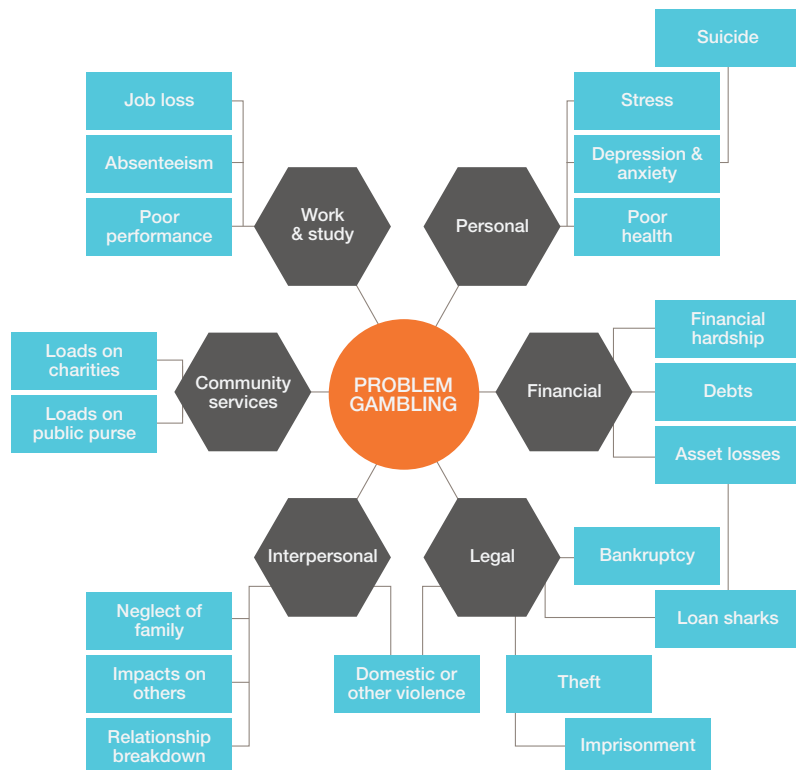
This study examines only a subset of the total number of possible comorbid interactions associated with problem gambling, an exhaustive set of which was set out by the Australian Productivity Commission (1999) (see figure 4.3). This is for two reasons.

First, of the six ‘impacts’ from problem gambling, two of these (‘relationship problems’ and ‘financial difficulties’) will only yield a cost to the state indirectly, and probably through the other four: health problems, housing problems, criminal activity and work difficulties. These latter four therefore make up our primary areas of interest. The second constraint determining the final interactions that will feed into our costings exercise is the availability of data; such that it is possible to measure possible associations between specific government services or resources with problem gambling.

**FIGURE 4.3**

**Problem gambling has multiple potential impacts on both individual problem gamblers and their wider social networks**

*The impacts of problem gambling on affected individuals*



Source: IPPR adaptation of data from Australian Productivity Commission, Australia's Gambling Industries (APC 1999)



## 4.9 SUMMARY

In this chapter, we have seen how self-reported ‘impacts’ of problem gambling on the lives of problem gamblers are represented to treatment providers such as Gamcare. Grouping these into six major categories (health problems; housing problems; criminal activity; financial difficulties; work difficulties; and relationship problems) we saw how the British and international academic literature has explored the extent of associations between these negative life outcomes and an individual being a problem gambler.

In order to identify which particular interactions from within these six categories are able to be included in the costing exercise to follow, we applied two criteria: that the interactions concern *primary associations* between an area of cost to government and an individual being a problem gambler; and that there is sufficiently relevant and robust available data.

Having applied these criteria, chapter 5 will outline the methods and results of a costing exercise focused on the following four areas of government expenditure: health; welfare and employment; housing; and criminal justice.

# 5. COSTING PROBLEM GAMBLING

The objective of this study is to provide the first estimate of the ‘excess fiscal cost’ to government incurred by people who are problem gambling in Great Britain. This is the first time such a study has been attempted for the UK, and, as such, it is intended to provide the basis for future studies based on increased amounts of population-level, gambling-related data collected more rigorously across a wider range of areas of public service provision and other areas of government expenditure.

Our examination of the existing literature (presented above) justifies a focus on four areas of interaction between problem gambling and government expenditure. These are: health; welfare and employment; housing; and criminal justice. Within these four areas, the available evidence narrows our analysis to six specific interactions:

- **health:** primary care (mental health) services; secondary mental health services; and hospital inpatient services
- **welfare and employment:** JSA claimant costs and lost labour tax receipts
- **housing:** statutory homelessness applications
- **criminal justice:** incarcerations.

The interactions that have been assessed were chosen on the basis of the evidence currently available.

In this chapter, we construct estimates for the excess cost in each of these areas separately, and sum them together to produce an *illustrative* total cost to government.

## 5.1 METHODOLOGY

### Data

The main reason why a study of this kind has not previously been conducted for Great Britain is the scarcity in relevant data of sufficient quality. This remains the key challenge for this study, and is a significant constraint to the scope and reliability of our findings.

There are two predominant data-related challenges for a study of this kind. The first is in estimating the scale of association between problem gambling and the incurrence of a cost to public resources. The second is in estimating an annualised unit cost for a given incurrence that is comparable across different forms of government expenditure or lost tax receipts.

For the first of these – measuring interactions between problem gamblers and state spending – there are three types of available evidence base:

- population-level prevalence surveys (such as those explored in chapters 3 and 4)
- convenience samples of state service users, excluding explicit gambling-related treatment (such as local homeless services and temporary accommodation)
- self-selected gambling treatment samples (such as those taken from the National Problem Gambling Clinic).

This study only uses data collected by the first two of these. In estimating the association between problem gambling and costs to government, we adopt a mixed approach, with a three-step hierarchy.

1. Where possible, we use findings from statistical modelling conducted on population-level prevalence surveys and reported in the existing academic literature, stress tested and contextualised by our own updated analysis of the survey data.
2. In the absence of appropriate research in the academic literature, we conduct our own econometric analysis of population-level prevalence surveys.
3. In the absence of appropriate population-level survey data, we construct an estimate using meta-analysis of published UK-based descriptive evidence from convenience samples of state service users outside of explicit gambling-related treatment.

As far as possible, this study attempts to control for socioeconomic attributes (such as age, gender, qualifications and household income). However, the method for controlling for independent factors varies from one approach to another within the hierarchies set out above, and in some cases is not possible at all. This means that the scale of association between problem gambling and different types of government cost are not immediately comparable between different service areas. It should also be noted, that in each case (respectively) of measuring associations between problem gambling and state cost, our analysis is dependent upon just a single study at a time. This is due to the limited available quantitative evidence in this field more broadly. More reliable results could be produced in the future if similar quantitative assessments are repeated from additional sources of evidence.

Finally, current attempts to measure associations between problem gambling and government service use are undermined by the potential for circular reasoning. In some cases, the criteria for meeting the threshold of being a problem gambler can overlap with the underlying causes of needing to use certain services, such as financial distress. This can lead to either reverse causality or results that are in part tautologies. This is discussed in more detail on a case by case base in this chapter.

## Causality

**This study does not determine causality between problem gambling and the incurrence of cost.** As with all existing UK and (most) international literature on problem gambling, this study is not able to control for less observable characteristics or comorbidities – for example the prior existence of mental health problems experienced by an individual, or their prior disposition towards taking risk. In practice, this means that the available data may omit variables that are the *cause* of both problem gambling itself, and the increased propensity to incur a cost to government. **That is to say, the costs outlined below cannot be said to be *caused* by problem gambling. Instead, our findings should be interpreted as costs that are *associated* with people who are also problem gamblers.**

## Unit costs

In addressing the second of the two predominant challenges identified above – constructing comparable unit costs for different areas of government spending – this study draws on the most relevant and up-to-date literature available in each of the four areas identified (health, housing, crime, and welfare and employment). In doing so, we are indebted to the Investment Agreement and Partnerships Exemplar project, funded by the Department for Communities and Local Government to produce a framework for reforming public service provision. We draw directly from the database itself or else the source material reviewed by the project; now updated and maintained by New Economy as a Unit Cost Database.

The database contains costs across crime, education and skills, employment and economy, fire, health, housing, and social services. The data undergoes regular validation processes, including assessing the robustness of the original source documentation, considering how data has been derived from constituent cost elements, comparing costs to related data, and exploring the availability of more recent sources. The data has also been reviewed by analysts from the relevant Whitehall departments (New Economy 2015).

Using this data, this report estimates annualised fiscal costs for the areas of government that correspond most closely to the types of costs associated with problem gambling. Nonetheless, a precise match between the questions asked in the survey data, and the available costings data, will always be impossible. We take care to avoid duplication of costs between different areas of government. However, such is the integrated nature of services and public administration that minimal duplication may, in some cases, be unavoidable. Costings are also necessarily deduced on a historical basis, before uprating to 2015/16 prices.

## 5.2 DEFINITIONS

### Defining problem gambling and estimating national prevalence

As discussed in chapter 32, an individual is identified as a problem gambler according to thresholds set out in screening tools (usually either the DSM-IV or PGSI). Both these screening tools have evolved iteratively over time, which means that much of the findings across the historical and international literature are not directly comparable. The choice of threshold used to determine whether an individual is a problem gambler (as opposed to an at-risk or social gambler) is also arbitrary to a degree,

and has varied in the literature (see for example Lakey et al 2007, Slutske et al 2011, Jazaeri and Habil 2012). Furthermore, the title, format and sampling methodology of a survey can all contribute to varying results for the prevalence of problem gambling from an otherwise similar population base, and using precisely the same screening tool (Williams and Volberg 2009). Finally, screen scores only represent proxies derived from self-reported data. Inevitably, some people who do *not* experience serious gambling-related harm will nonetheless be classified as problem gamblers (a 'type I' error); and some people who *do* experience significant harm may nonetheless not meet the threshold (a 'type II' error).

Most of the above problems are impossible to control for entirely and remain important limitations to the reported findings. In an attempt to mitigate some of these problems we use ranged estimates for the likely prevalence of problem gambling using the 95 per cent confidence intervals for problem gambling prevalence estimates produced by either the DSM-IV or PGSI screens. Using both screening tools is in keeping with the majority of UK population-level surveys: much of the secondary literature used as the evidence base for identifying associations between problem gambling and increased government cost uses a mixture of different screens. A large range is indicative of the inevitable uncertainty around such estimates.

We estimate the range for the population of problem gamblers in Great Britain as a whole in two ways: first, using results from the British Gambling Prevalence Survey (BGPS); and second, using the weighted sum from the results of the Health Survey England (HSE), Scottish Health Survey (SHS) and Welsh Problem Gambling Survey (WPGS). Meanwhile, the range for individual nations are estimated using the respective national surveys. Ranges estimated using the HSE, SHS and BGPS are produced by calculating the lower bound 95 per cent confidence interval and upper bound confidence interval, for the minimum and maximum results (respectively) from either the DSM-IV or PGSI. Due to the availability of published data this was not possible for the WPGS. Results for the WPGS represent the range between 95 per cent confidence intervals for the maximum prevalence rate using either the DSM-IV or PGSI. This means the extent to which prevalence is higher in Wales compared with the rest of Great Britain is exaggerated.

In estimating the headline excess fiscal cost for Britain as a whole, we use the upper and lower bound from the two ranges presented in table 5.1.

Taking everything from this chapter so far, and notwithstanding steps taken to maximise the accuracy and robustness of the results, **the estimates produced in this report should be treated as illustrative**, representing a first step along the journey to understanding the total cost to government of problem gambling in Great Britain.

**TABLE 5.1****Ranges for the number of problem gamblers in Great Britain and constituent nations used in our costings exercise**

	Total population (2015)	Lower bound prevalence rate (%)	Upper bound prevalence rate (%)	Lower bound number of problem gamblers	Upper bound number of problem gamblers	Survey
<b>England</b>	44,381,213	0.2	0.7	110,000	300,000	Health Survey England 2012
<b>Scotland</b>	4,460,738	0.2	0.7	10,000	30,000	Scottish Health Survey 2013
<b>Wales</b>	2,543,797	0.8	1.4	20,000	40,000	Welsh Problem Gambling Survey 2015
<b>GB (sum)</b>	51,385,748	0.3	0.7	140,000	370,000	Sum of England, Scotland and Wales above
<b>GB</b>	51,385,748	0.7	1.2	360,000	620,000	British Gambling Prevalence Survey 2010

Source: IPPR calculations using ONS, 'Population Estimates' (ONS 2016b), British Gambling Prevalence Survey 2010 (BGPS 2011), Health Survey England 2012 (HSE 2013), Scottish Health Survey 2013 (SHS 2014), Welsh Problem Gambling Survey 2015 (WPGS 2016)<sup>17</sup>

**Defining 'excess fiscal cost'**

We define the fiscal cost as a transfer *from* a government entity *to* a non-government entity: in this case an individual, or else the sum of individuals, who are problem gamblers. The 'excess' fiscal cost is the difference between the size of that transfer, over and above what might be expected for an otherwise similar individual or group of individuals in the rest of the population. Our baseline for comparison, therefore, is anyone who is not a problem gambler: this includes both gamblers and non-gamblers.

The fiscal cost should be considered as distinct from economic cost. Transfers are not treated as costs in standard economic theory, as they do not represent a loss to the economy as a whole. This is because the loss to the 'donor' (in this case government) is, in theory, precisely equal to the gain made by the 'recipient' (the individual problem gambler), leaving the overall level of output in the economy unchanged. Thus the focus of 'cost' in this report is more narrow than, and distinct from, economic or social cost defined more broadly. It also does not include second order fiscal costs (those that might arise indirectly as a consequence of social and economic cost). However, given that first order fiscal costs still represent resource that could otherwise have been put to alternative use, this albeit narrow interpretation of cost is nonetheless meaningful.

Finally, excess fiscal cost should be considered in gross terms. **This study does not represent a cost-benefit analysis of problem gambling, and no attempt is made to assess the additional revenues that are accrued to**

<sup>17</sup> Prevalence rates estimated from the HSE, SHS and BGPS represent the lower bound 95 per cent confidence interval, and upper bound confidence interval, for the minimum and maximum results (respectively) from either the DSM-IV or PGSI. For the Welsh Problem Gambling Survey, the results represent the range between 95 per cent confidence intervals for the maximum prevalence rate using either the DSM-IV or PGSI. Estimates for the number of problem gamblers have been rounded to the nearest 10,000.

**government through gambling-related activities.** We also do not attempt to measure gains or savings that may be made further down the line, such as through improved tax receipts or avoided future costs, brought about by a particular government intervention or fiscal transfer.

### 5.3 COSTINGS AND RESULTS

#### Health

As we saw in chapter 4, there is a reasonable body of up-to-date, domestic literature that has attempted to identify primary associations between problem gambling and the extent of access to health services. The most relevant for the purposes of this study is Cowlshaw and Kessler (2015), who examined the overrepresentation of problem gamblers in certain health care settings using the Adult Psychiatric Morbidity Survey (APMS) – a representative sample of adults in England – and the DSM-IV screening tool.

Using multiple regression models, the authors found that problem gamblers are 2.69 times more likely to have visited a GP regarding a mental, nervous or emotional complaint in the previous 12 months; 8.54 times more likely to be accessing counselling or therapy services for mental health problems; and 5.53 times more likely to have been a hospital inpatient in the previous three months (ibid).

No statistically significant relationship was found between problem gambling and either visiting a GP with a physical complaint or having been a hospital outpatient in the previous 12 months. All results controlled for the sociodemographic characteristics of survey participants (such as sex, age, race, relationship status, education and employment status).

With regards to assessing a present-day annual fiscal cost in the current study, Cowlshaw and Kessler's analysis should be considered in view of three important limitations. First, the data pertains to 2007. This undermines the extent to which the findings accurately reflect associations between problem gambling and health services in the present day. Second, the evidence from the APMS is self-reported, and so does not represent an objective measure of health service use.

Finally, although the study only included problem gamblers that had gambled in the past year, the questions used in the screening instrument did not specify a time frame. This means it is not possible to distinguish between past-year and lifetime problem gambling. It is possible that this limitation is also present for other areas of service use examined elsewhere in this chapter – the implication being that the annual fiscal costs can be said to include not only those who are 'current' problem gamblers, but also those who are present gamblers but were only problem gamblers at some point previously in their lives.

#### *Primary care (mental health) services*

For the unit costs of general medical services (GMS), we refer directly to the source material used for the New Economy Unit Cost Database. Analysis by the Personal Social Services Research Unit (PSSRU) at the University of Kent estimates that the average for all **GMS costs is around £3.30 (2014/14 prices) per minute of patient contact**, to the general practice (GP) surgery (Curtis 2014). We estimate this to be **equivalent to £3.36 in 2015/16 prices** (IPPR analysis using New

Economy 2015 and ONS 2016c). We take the **average GMS face-to-face consultation of 11.7 minutes** as our average for all primary care contact per episode (Curtis 2014). This seems a reasonable assumption, with the average telephone consultation lasting a little shorter at 7.1 minutes, and the average out-of-surgery visit taking twice as long, at 23.4 minutes (ibid).

According to the most recent analysis of NHS data, the average patient had 5.5 GMS consultations in a single year (2008). IPPR analysis of the APMS suggests that around 16.3 per cent of people who reported visiting their GP did so to report a mental, rather than physical, health complaint. If we assume that this ratio is representative of all GMS consultations, then **the average number of mental health complaints presented to a GMS consultation each year is 0.9 per person in the UK**. By applying the findings from Cowlshaw and Kessler (2015), we estimate that the average problem gambler sees a GP regarding a mental health complaint 2.4 times a year, giving an **excess incidence of 1.5 times per year relative to the average person in the population**. Multiplying this figure by our average consultation time of 11.7 minutes, and our average cost per minute of £3.36 per minute – along with our estimated range for the prevalence rate of problem gambling in Great Britain – gives a **total excess fiscal cost incurred on GMS by problem gamblers of between £10 and £40 million**.

#### *Secondary mental health services*

Using meta-analysis of health cost modelling conducted by the King's Fund published in 2008 (McCrone et al 2008), the New Economy Unit Cost Database reports an estimate for the average cost of service provision for adults suffering from a mental disorder, excluding dementia. The total fiscal cost found was £855 per person,<sup>18</sup> per year in 2007/08 prices, which **equates to £886 when uprated to 2015/16 prices** (IPPR analysis using New Economy 2015 and ONS 2016c).<sup>19</sup>

IPPR analysis of the APMS suggests that **2.73 per cent of adults were receiving counselling or therapy for mental health issues in 2007/08**. We use this as a proxy for the proportion of the population likely to be drawing on a service for a mental health disorder. This is, though, likely to be an underestimate of the full proportion in 2015/16 on three accounts. First, the prevalence of mental health issues is thought to have increased since 2007/08 (MHF 2013, CEP-MHPG 2012); second, because more people can be expected to draw on counselling services at some time during a year than there are at any single given point in time (as captured by the survey question); third, this estimate will not include individuals who access mental health services outside of counselling or therapy. This will be offset to some extent by the fact that the survey data does not distinguish between private and state provision, and so some small proportion of service use will draw less on state resources than the assumed average.

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18 We exclude costs to the criminal justice system to avoid double counting between our estimates for costs to the NHS and cost to the criminal justice system.

19 This estimate should be treated with caution given its derivation from 2007 data.



Nonetheless, it is still likely that **2.73 per cent represents a conservative estimate for the population-wide levels of access to counselling and therapy treatments in 2015/16, and an even more conservative estimate for access to mental health services overall.** If we apply the findings from Cowlshaw and Kessler (2015) and multiply 2.73 by 8.54, **we estimate that 23.3 per cent of problem gamblers use mental health services in a year.** Subtracting 2.73 from 23.3 gives an **excess use of mental health services of 0.206 per person.** Using 0.206 as the excess incidence, and £886 as the unit cost, and multiplying both together with our ranged prevalence estimates for the number of problem gamblers in Great Britain, we estimate **an excess annual fiscal cost for secondary mental health services, and associated with problem gamblers, of between £30 million and £110 million.**

### *Hospital inpatient services*

Based on meta-analysis published in the New Economy Unit Cost Database, of the Department of Health's NHS reference costs (DH 2015), **we take £1,807 as an estimate for the average cost of a finished consultant episode (FCE) for an overnight patient.** This figure is made up of the weighted average from an estimated unit cost of £3,375 for elective admissions and £1,542 for non-elective admissions (New Economy 2015). In total, **this is equivalent to £1,842 in 2015/16 prices** (IPPR analysis using New Economy 2015 and ONS 2016c).

**TABLE 5.2**

**Excess fiscal cost (£ million) to health services incurred by people who are problem gamblers, by nation**

	Interaction	Lower bound cost	Upper bound cost
England	Primary care (mental health) services	10	20
	Secondary mental health services	20	50
	Hospital inpatient services	110	290
Scotland	Primary care (mental health) services	Less than 5	Less than 5
	Secondary mental health services	Less than 5	10
	Hospital inpatient services	10	30
Wales	Primary care (mental health) services	Less than 5	Less than 5
	Secondary mental health services	Less than 5	10
	Hospital inpatient services	20	40
GB sum	Primary care (mental health) services	10	20
	Secondary mental health services	30	70
	Hospital inpatient services	140	360
GB	Primary care (mental health) services	20	40
	Secondary mental health services	70	110
	Hospital inpatient services	350	610

Source: IPPR analysis using ONS 2016b, ONS 2016c, New Economy 2015, BGPS 2011, HSE 2013, SHS 2014, WPGS 2016, Cowlshaw and Kessler 2015, Curtis 2014, APMS 2007, New Economy 2015, MHF 2013, CEP-MHPG 2012 and DH 2015.

IPPR analysis of European Commission data suggests that for 2014 on average there were 0.13 inpatient discharges (a consultant episode finishes at the point of discharge) per person in the UK as a whole (Eurostat 2016). Using modelling results from Cowlshaw and Kessler (2015), and multiplying 0.13 by 5.53, we arrive at an estimate of 0.73 inpatient discharges per person among the British problem gambling population, giving an excess inpatient discharge rate of 0.6. However, IPPR analysis of the APMS shows that 12.5 per cent of problem gamblers who reported being a hospital inpatient in the past three months had done so as a result of a mental health complaint.

**To avoid double counting of cost with the mental secondary services (above), we therefore reduce our excess inpatient rate by 12.5 per cent, giving a final excess rate of 0.53.** Multiplying this by £1,842 and grossing up for our estimated range of problem gamblers in Great Britain gives a **total excess fiscal cost between £140 million and £610 million for 2015/16.**

### **Welfare and employment**

As described in chapter 4, there is an absence in the existing academic literature of probability modelling regarding problem gambling and rates of access to out-of-work benefits. However, new IPPR modelling, using self-reported survey data from the 2012 Health Survey England, found a statistically significant relationship between being a problem gambler (defined using the DSM-IV) and being a jobseeker's allowance (JSA) claimant. Controlling for age, gender, ethnicity, household income and qualification level we ran a probit regression model in STATA 13 and found that being a **problem gambler was associated with being 2.653 times more likely to be claiming JSA compared with non-problem gamblers.** The result was statistically significant at the 99.9 per cent level.

A significant limitation with these findings, however, is that the evidence is self-reported. Self-reported data on benefit use, in particular, can be unreliable as people can deliberately chose not to disclose information. Nonetheless, the use of self-reported welfare evidence remains commonplace in the economic literature. There is also potential risk for reverse causality or circular reasoning, given that items on the DSM-IV screening tool refer to financial distress, and that people using state welfare are likely to be under similar distress by virtue of their dependence on out-of-work benefit income.

The same model was run for other out-of-work benefits such as employment support allowance and income support, but no statistically significant relationships were found.

Using results from the Department for Work and Pensions (DWP) policy model conducted in 2012/13, New Economy estimates that **the cost of an individual claiming JSA rather than being in work is £9,234 per year, per claimant (Hansard 2013). This equates to £9,568 in 2015/16 prices.** However, this is likely to be an underestimate of the true present day value given that average earnings have risen a little faster than inflation between 2013 and 2015, meaning the foregone tax revenue from an individual claiming benefits rather than working and paying tax is likely to be higher.

The DWP costing includes benefit savings and increases in tax revenues, using an estimate for earnings consistent with those found for former JSA claimants (Adams et al 2012). It also assumes that an individual is either on JSA or in employment for the entirety of a year. However, on average, JSA claimants spend far less than 12 months without work. Our analysis of ONS claimant data suggests that the average duration for JSA off-flows (people coming off JSA) was 16 weeks (IPPR calculations using Nomis 2016). This is likely to be an underestimate of the true amount of time that a problem gambler might spend as a JSA claimant. This is due to the associations between problem gambling and mental health issues presented above, and since claimants with mental health problems tend to make up a disproportionate number of those on JSA for more than a year (McManus et al 2012).

Taking all of the above together, **a conservative estimate for the annual fiscal cost of a typical JSA claimant in 2015/16 prices is £2,995**. Further analysis of the ONS data claimant data on stocks and flows shows that 2.15 million JSA claims fell, at least partially, during the 12 months between October 2015 and September 2016 (Nomis 2016). Dividing this figure by the working-age population over this period – 40.9 million – gives an average of 0.05 JSA claims per working-age adult in the UK. Taking this finding together with the IPPR modelling results reported above, we estimate that there are around 0.11 JSA claims per problem gambler, with the **excess propensity to claim JSA valued at around 0.06 compared with the population as a whole**. Multiplying this by our estimated prevalence range for problem gambling in Great Britain, and the estimated unit cost of a typical JSA claim, gives **a total excess fiscal cost of between £40 and £160 million for problem gamblers through JSA claimant costs and lost tax receipts**.

**TABLE 5.3**

**Excess fiscal cost (£ million) to health services incurred by people who are problem gamblers, by nation**

	Interaction	Lower bound cost	Upper bound cost
<b>England</b>	JSA claimant costs and lost tax receipts	30	80
<b>Scotland</b>	JSA claimant costs and lost tax receipts	Less than 5	10
<b>Wales</b>	JSA claimant costs and lost tax receipts	10	10
<b>GB sum</b>	<i>JSA claimant costs and lost tax receipts</i>	40	100
<b>GB</b>	JSA claimant costs and lost tax receipts	90	160

Source: IPPR analysis using ONS 2016b, ONS 2016c, New Economy 2015, BGPS 2011, HSE 2013, SHS 2014, WPGS 2016, Hansard 2013, Adams et al 2012, McManus et al 2012 and Nomis 2016

### Statutory homelessness applications

There is an absence of robust quantitative analysis on the relationship between homelessness and problem gambling. This is due, in large part, to the fact that sampling methods for population-level studies rely on either

telephone numbers or postcodes, meaning that the homeless are among a number of subgroups not captured in the prevalence survey samples.

### ***Estimating the association between problem gambling and homeless services***

Sharman et al (2014) conducted the first attempt at a UK-based quantitative study in this area. Taking a sample of 456 people attending homeless services in three separate sites in London (using the PGSI) they found 11.6 per cent of homeless individuals to be problem gamblers. This compares with 0.7 per cent in both Great Britain as a whole (BGPS 2011) and England and Scotland combined (Wardle et al 2014).

From these findings, an odds ratio can be estimated between the prevalence of problem gambling among homeless people who choose to use homeless services, and prevalence in the general population more broadly, using the following formula:  $OR = ad/bc$ . (Where  $OR$  is the odds ratio between a problem gambler accessing homelessness services compared with a non-problem gambler accessing these services;  $a$  is the proportion of problem gamblers in the homelessness service user sample;  $b$  is the proportion of problem gamblers in the non-homeless sample;  $c$  is the proportion of non-problem gamblers in the homelessness service user sample; and  $d$  is the proportion of non-problem gamblers in the non-homeless sample).

This approach to estimating an odds ratio has a number of significant limitations. First, there is no attempt to control for even easily observable confounding variables (such as age and gender); for example, of the 246 participants who gave information on their gender, only 7 per cent were female. This means we are unable to say what the probability of this homeless population being a problem gambler should be, given its profile and composition. In this study, our only attempt to capture confounding variables for this group is to compare the rate of problem gambling to that of the male population in England and Wales, rather than the population as a whole (see below). This gives a prevalence rate of 1.5 per cent for the population as a whole (Wardle et al 2014).

Second, problems in discerning the direction of causality are also particularly problematic for a convenience sample of homelessness service users. Since the sample is small, vulnerable to self-selection bias, and made up exclusively from individuals in London, any generalisations to the population of homelessness service users as a whole will be inherently unreliable. The fact these people are homeless also presents further issues identified by Mark Griffiths's 2015 review of Sharman et al (2014). First, since a number of the screening questions concern the financial consequences of gambling, individuals using homelessness services who also gamble are far more likely to be identified as problem gamblers due to their depleted resources. Increased propensity for gambling may also be brought about by factors specific to homelessness: in other words, there is significant likelihood of reverse causality. For example, gambling may be seen as a necessary price to pay for the relative safety and comfort – and sometimes free snacks – of a high-street bookmaker, casino or gambling arcade (Griffiths 2015). In either case, the state of being homeless would itself be *contributing* to the increased likelihood of an individual being identified as a problem gambler according to the PGSI.

Nonetheless, using the odds ratio presented above, and comparing the prevalence of problem gambling among men in the population as a whole to those using homelessness services in London, we can estimate that **problem gamblers are 8.7 times more likely to use homelessness services compared to the population as a whole**. Statistics from the Department for Communities and Local Government show that there were 113,000 successful applications to statutory homelessness services in England during 2015 (DCLG 2016). Comparing this to the ONS mid-year estimate for the number of households in 2015, we can estimate that, on average, there were 0.005 applications for homelessness services per household across the year. Multiplying by 8.7 gives a figure of 0.044 applications per problem gambler household, **and an excess number of annual homeless applications of 0.039 per problem gambler household**.<sup>20,21</sup>

#### *Estimating the excess fiscal cost*

Using analysis conducted by Shelter, New Economy estimates that **the fiscal costs associated with a period of statutory homelessness was £2,501 per application in 2010/11** (Shelter 2012, New Economy 2015). This cost was made up of legal and administration costs, as well as the costs of four weeks in temporary accommodation while an application was processed. **This equates to £2,683 in 2015/16 prices**. However, this is likely to represent a significant underestimate; first, because accommodation costs have risen faster than inflation between 2010/11 and 2015/16; and second, little is known about the average period in temporary accommodation but some research has suggested it can be far longer than four weeks (Rose et al 2016). Applying this unit cost to the annualised rate of statutory homelessness applications per problem gambler household, and then multiplying again by our estimate range for problem gambling prevalence, gives an **excess fiscal cost of between £10 and £60 million per year**.

**TABLE 5.4**

**Excess fiscal cost (£ million) to housing services incurred by people who are problem gamblers, by nation**

	Interaction	Lower bound cost	Upper bound cost
<b>England</b>	Statutory homelessness applications	10	30
<b>Scotland</b>	Statutory homelessness applications	Less than 5	Less than 5
<b>Wales</b>	Statutory homelessness applications	Less than 5	Less than 5
<b>GB sum</b>	<i>Statutory homelessness applications</i>	<i>10</i>	<i>40</i>
<b>GB</b>	Statutory homelessness applications	40	60

Source: IPPR analysis using ONS 2016b, ONS 2016c, New Economy 2015, BGPS 2011, HSE 2013, SHS 2014, WPGS 2016, Sharman et al 2014, Wardle et al 2014, Griffiths 2015, DCLG 2016

20 This assumes that a) the proportion of problem gamblers in the stock of homelessness services users (as measured by Sharman et al [2014]) is the same as for the on-flow (applications) to the same services; b) on average problem gambler households are the same size as for the population as a whole; and c) that additional household members in families where there is a problem gambler are no more likely to be a problem gambler than a random individual from the population as a whole. These assumptions are necessary in the absence of further research. The extent to which any or all of these assumptions are inaccurate will potentially undermine the reliability of these findings.

21 Where a 'problem gambler household' is defined as a household which includes at least one adult problem gambler.

## Criminal justice

As with homelessness services, there is an absence of reliable attempts to quantify the relationship between problem gambling and crime. This is due, in large part, to the exclusion of the prison population in most telephone or postcode-based prevalence surveys, but also due to the underreporting of crime in self-reported survey data (Gerstein et al 1999). Unlike in other countries, there has not been an attempt to reliably measure the prevalence of problem gambling at the point of arrest in the UK. However, there have been attempts to measure problem gambling prevalence within the prisoner population.

### *Estimating the association between problem gambling and incarceration*

May-Chahal et al (2012) provide the only UK study examining problem gambling in prisons over the past decade. The study looked at two separate prison populations: one male, and from the north of England; the other female, and from the south of England. The study used a sample of 421 people (48 per cent male and 52 per cent female), with a problem gambling prevalence rate of 10.4 per cent for men and 5.9 per cent for women (identified through the PGSI). Given that the UK prison population is 96 per cent male (MoJ 2016) we can estimate an average **weighted prevalence rate for all prisoners (on the basis of this sample) of 10.2 per cent.**

As with the homeless sample, individuals in the prison sample are more likely to satisfy the PGSI problem gambling criteria as a result of the scarcity of resources available to the prison population. This means that identifying directions and patterns in causality are particularly problematic compared even with the general limitations of the present exercise as a whole. **To take account of reverse causality, we therefore take a more conservative estimate of problem gambling for the purposes of our costings exercise. Instead of using the problem gambling prevalence rate, we take the smaller proportion of prisoners who claim that their current offence was linked to gambling: 5.4 per cent for men and 3 per cent for women, and weighted to 5.2 per cent for the prison population as a whole. In effect, this assumes that all of the prisoners whose offence is linked to gambling come from within the problem gambling prisoner population.**

In the absence of available data to run a regression model, we repeated the analysis conducted for homelessness service users and using the same odds ratio (see above). Based on the increased likelihood for men to be in prison compared to women, we estimated a weighted prevalence of problem gambling in the population as a whole (based on PGSI) of 1.3 per cent (IPPR analysis using BGPS 2011). Using the same formula to identify the odds ratio between a problem gambler and a non-problem gambler being in prison; we take *a* to represent the proportion of problem gamblers in the prison sample (those whose offence is linked to gambling); *b* as the proportion of problem gamblers in the non-prison sample; *c* as the proportion of non-problem gamblers in the prison sample; and *d* as the proportion of non-problem gamblers in the non-prison sample.

As with our analysis on homelessness service users, this approach is again undermined significantly by an inability to control for any confounding variables. This notwithstanding, and using the above ratio, we can estimate that **problem gamblers are 4.4 times more likely to be in prison than the average member of the population**. Statistics from the Ministry of Justice (MoJ 2012) show that there was an average of 103,000 immediate prison sentences a year between 2001 and 2011 (the most recent years for which sentence levels by duration are available). In addition, the prison population has averaged 71,000 for any given month over the past two years (MoJ 2016). Taking these together, the total number of prison sentences served during a given 12-month period in recent years is likely to be around 174,000. Comparing this to the ONS mid-year population estimate for all adults in 2015, suggests that on average there were 0.004 prison sentences served per adult in the population. Multiplying by 4.4 gives a figure of 0.016 sentences per problem gambler, **and an excess number of annual prison sentences of 0.013 per problem gambler**.

#### *Estimating the excess fiscal cost*

Using 2014 costings analysis by the MoJ, New Economy estimates that **the fiscal costs associated with a 12-month prison sentence was £33,785 per prisoner in 2013/14, up-rateable to £34,440 in 2015/16 prices** (IPPR analysis of New Economy 2015 and ONS 2016c). IPPR analysis of sentence durations for the stock and flow of the prisoner populations suggests that the average duration of a given prison term, over a given 12-month period is 8.3 months. This means we can estimate an adjusted **fiscal cost of £23,318 for any given prison term during a 12-month period**. Applying this unit cost to the excess number of prison terms associated with the population of problem gamblers, and multiplying again by our estimated range for problem gambling prevalence gives an **excess fiscal cost to the prison system for people who are also problem gamblers of between £40 and £190 million per year**.

**TABLE 5.5**

**Excess fiscal cost (£ million) to criminal justice services incurred by people who are problem gamblers, by nation**

	Interaction	Lower bound cost	Upper bound cost
<b>England</b>	Incarcerations	30	90
<b>Scotland</b>	Incarcerations	Less than 5	10
<b>Wales</b>	Incarcerations	10	10
<b>GB sum</b>	Incarcerations	40	110
<b>GB</b>	Incarcerations	110	190

Source: IPPR analysis using ONS 2016b, ONS 2016c, New Economy 2015, BGPS 2011, HSE 2013, SHS 2014, WPGS 2016, May-Chahal et al 2012, MoJ 2012 and MoJ 2016

#### **5.4 SUMMARY**

The analysis presented in this chapter represents the first attempt in Great Britain to estimate the excess fiscal costs of problem gambling. Due to limitations in the available data, however, **the above findings should not be taken as the excess fiscal cost caused by problem gambling**. Instead, they should be taken as an *illustrative estimate*

**for the excess fiscal costs incurred by people who are problem gamblers, beyond those that are incurred by otherwise similar members of the population.**

The analysis presented in this chapter provides an illustrative estimate for the costs across six interactions, from four areas of potential government liability: primary care (mental health) services; secondary mental health services; and hospital inpatient services (**health**); JSA claimant costs and lost labour tax receipts (**welfare and employment**); statutory homelessness applications (**housing**); and incarcerations (**criminal justice**). The interactions that have been assessed were chosen on the basis of the evidence currently available.

The quality of data for different areas of interaction is highly variable, and therefore the methods for estimating excess incidence and unit cost are not directly comparable across different interactions. However, taken together, the sum of our findings would imply that the identifiable excess fiscal cost associated with people who are problem gamblers for the whole of Great Britain is in the region of £260 million to just over £1.16 billion. Just over half (54 per cent) of this implied overall cost is dependent upon a single interaction: hospital inpatient services. This gives further reason to consider these illustrative results with caution, especially given that the sample size of problem gamblers who also reported being a hospital inpatient in the APMS is small and therefore likely to be subject to volatility.

**TABLE 5.6**

**Total excess fiscal cost (£ million) to government spending incurred by people who are problem gamblers by bearer of cost, Great Britain**

	Lower bound cost	Upper bound cost	Bearer of cost
Primary care (mental health) services	10	40	GP/NHS (100 per cent)
Secondary mental health services	30	110	CCG/NHS (87 per cent), local authority/social services (13 per cent)
Hospital inpatient services	140	610	CCG/NHS (100 per cent)
JSA claimant costs and lost tax receipts	40	160	DWP/HMT (100 per cent)
Statutory homelessness applications	10	60	Local authority (78 per cent), local authorities and registered social landlords (19 per cent), MoJ/HMT (3 per cent)
Incarcerations	40	190	Criminal justice/prisons (100 per cent)

Source: IPPR analysis using ONS 2016b, ONS 2016c, New Economy 2015, BGPS 2011, HSE 2013, SHS 2014, WPGS 2016, Cowlishaw and Kessler 2015, Curtis 2014, APMS 2007, New Economy 2015, MHF 2013, CEP-MHPG 2012, DH 2015, Hansard 2013, Adams et al 2012, McManus et al 2012, Nomis 2016, Sharman et al 2014, Wardle et al 2014, Griffiths 2015, DCLG 2016, May-Chahal et al 2012, MoJ 2012 and MoJ 2016.



## 6. NEXT STEPS

This is the first time a costing exercise of this kind (specifically to determine the excess fiscal costs of problem gambling) has been attempted for Great Britain.

The figures generated provide a clear indication of a number of costs to government associated with individuals who are problem gamblers. It should therefore form the basis for a renewed effort to both reduce the number of problem gamblers in Great Britain, and to increase the availability of services providing treatment to problem gamblers, and so mitigate the extent of gambling-related harm.

This report has been able to identify interactions for which there is an excess fiscal cost associated with individuals who are problem gamblers across four areas of government activity: health; welfare and employment; housing; and criminal justice. There are likely to be additional costs across a greater number of interactions, but where there is currently insufficient data to demonstrate this robustly.

This report does not seek to determine the relative extent to which gambling-related harm would be reduced through greater regulation of the gambling industry, or increased provision of services for problem gamblers. However, three conclusions are able to be drawn.

First, problem gambling is often bound up with individuals who experience a number of complex, comorbid social problems. **There is a growing consensus that complex problems such as these are best addressed at the local level**, through breaking down individual service silos and delivering integrated care and treatment which can draw on a wide range of professional expertise (Muir and Parker 2014).

In principle, the current trajectory towards greater devolution of health and social care to local areas could offer the opportunity to deliver this kind of integrated service provision for problem gamblers. However, both local authority and public health budgets are set to face continued reductions in the coming years: local government spending power is projected to fall by 10 per cent in real terms between 2015/16 and 2019/20<sup>22</sup>; while annual real-terms reductions of 3.9 per cent to public health budgets are expected in each year of the current spending review period, 2015/16–2020/21 (Nuffield Trust et al 2015). **Government must therefore ensure that local areas have both the systems to enable integration and the resources available to be able to tackle problem gambling locally.** It is important that government ensures the gambling industry and charities aimed at promoting ‘responsible gambling’

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22 IPPR analysis of November 2015 spending review.

continue to contribute resources towards local efforts to tackle problem gambling and its effects.

Second, the wide range of effects of problem gambling mean a **government strategy is required to bring on board the various central departments that have a stake in reducing gambling-related harm**. While responsibility for gambling policy sits within the DCMS, it is clear that departments such as the Department of Health, Ministry of Justice and Department for Work and Pensions should also be involved in finding ways to minimise the extent of gambling-related harm, including through reducing the number of problem gamblers in the first instance. Past efforts at tackling problems such as alcoholism show that a clear national strategy can be an important precursor to effective local implementation.

In keeping with the ongoing triennial review into stakes and prizes, **an overarching government strategy on problem gambling should consider the ease with which people are able to access gambling activities, and so risk becoming problem gamblers**. It should also continue to **monitor how closely the gambling industry is regulated, and whether there is a link between the extent of regulation and the extent of problem gambling within the population**.

Third, **a more persuasive case for tackling problem gambling and its effects could be made in future if there were more data available**. There is, therefore, an urgent need for central government departments, local authorities, service providers, academics and the responsible gambling community to come together to fill gaps in the available evidence base. This should include taking more opportunities to screen for problem gambling as individuals come into contact with services (such as the NHS and the criminal justice system), and training professionals on the frontline (such as nurses and police officers) to understand the need to identify problem gambling wherever possible. **Progress has been made on screening for alcohol and drug abuse in recent years. Problem gambling should catch up**.

This effort should also include screening for problem gambling in a wider number of population-level surveys, including cohort surveys tracking people across time, alongside the extent to which individuals access services that draw on government resources. As we have seen, it is surveys such as these that provide the best basis on which to determine excess fiscal costs associated with problem gambling.

## 6.1 SUMMARY

Problem gambling affects the lives of millions of people across Great Britain, and, as such, also has a significant impact on the public finances. It is time for both central and local government to recognise the impact of problem gambling on individuals and communities. They must take steps to reduce the number of problem gamblers, and ensure that effective services are available to help those whose lives are blighted by this ‘hidden addiction’. We hope this report will be the first step along the journey to understanding the total cost to government of problem gambling in Great Britain, and the starting point for future estimates as more data is collected.

# REFERENCES

- Abbott MW and Volberg RA (1992) 'Frequent gamblers and problem gamblers in New Zealand', Research Series no 14, New Zealand Department of Internal Affairs
- Adams L, Oldfield K, Riley C and Skone James A (2012) *Destinations of Jobseeker's Allowance, Income Support and Employment and Support Allowance Leavers 2011*, Department for Work and Pensions research report 791. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/214578/rrep791.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214578/rrep791.pdf)
- Afifi TO, Brownridge DA, MacMillan H, Sareen J (2010) 'The relationship of gambling to intimate partner violence and child maltreatment in a nationally representative sample', *Journal of Psychiatric Research* 44: 331–337
- Australian Productivity Commission [APC] (1999) Australia's Gambling Industries. <http://www.pc.gov.au/inquiries/completed/gambling/report>
- Barnes GM, Welte JW, Hoffman JH and Dintcheff BA (1999) 'Gambling and alcohol use among youth: influences of demographic, socialization, and individual factors', *Addictive Behaviours* 24(6): 749–767
- Battersby M, Tolchard B, Scurrah M and Thomas L (2006) 'Suicide ideation and behaviour in people with pathological gambling attending a treatment service', *International Journal of Mental Health and Addiction* 4(3): 233–246
- Blaszczynski A (1994) 'Criminal offences in pathological gamblers', *Psychiatry, Psychology and Law* 1(2): 129–38
- Bowden-Jones H (2012) 'Criminal behaviour in pathological gamblers: Findings from the National Problem Gambling Clinic', presentation: [http://www.easg.org/media/file/loutraki2012/pres\\_pdf\\_loutraki\\_2012/thursday\\_20\\_september\\_2012/1345-1545/parallel\\_2/1\\_henrietta\\_bowden-jones.pdf](http://www.easg.org/media/file/loutraki2012/pres_pdf_loutraki_2012/thursday_20_september_2012/1345-1545/parallel_2/1_henrietta_bowden-jones.pdf)
- Brading R (2003) 'Gambling as Cause of Bankruptcy in Australia and the US', *New Directions in Bankruptcy* 13(2): 16, 17
- British Gambling Prevalence Survey [BGPS] (2000) British Gambling Prevalence Survey 1999. <http://www.gamblingcommission.gov.uk/pdf/Gambling%20behaviour%20in%20Britain%20results%20from%20the%20BGPS%202000%20-%20Jun%202007.pdf>
- British Gambling Prevalence Survey [BGPS] (2008) *British Gambling Prevalence Survey 2007*. <http://www.gamblingcommission.gov.uk/pdf/British%20Gambling%20Prevalence%20Survey%202007%20-%20Sept%202007.pdf>
- British Gambling Prevalence Survey [BGPS] (2011) *British Gambling Prevalence Survey 2010*. <http://www.gamblingcommission.gov.uk/pdf/british%20gambling%20prevalence%20survey%202010.pdf>
- Centre for Economic Performance Mental Health Policy Group [CEP-MHPG] (2012) *How Mental Illness Loses Out in the NHS*. <http://cep.lse.ac.uk/pubs/download/special/cepsp26.pdf>
- Cherpitel CJ and Ye Y (2008b) Trends in alcohol- and drug-related ED and primary care visits: data from three U.S. national surveys (1995–2005)', *American Journal of Drug and Alcohol Abuse* 34: 576–583
- Cowlshaw S and Kessler D (2015) 'Problem Gambling in the UK: Implications for Health, Psychosocial Adjustment and Health Care Utilization', *European Addiction Research* 22: 90–98
- Crofts P (2002) *Gambling and Criminal Behaviour: An Analysis of Local and District Court Files*, Casino Community Benefit Fund
- Cunningham-Williams RM, Cottler LB, Compton WM and Spitznagel EL (1998) 'Taking chances: problem gambling and mental health – results from the St. Louis epidemiologic catchment area (ECA) study', *American Journal of Public Health* 88: 1093–1096
- Curtis L (2014) *Unit Costs of Health and Social Care 2014*, Personal Social Services Research Unit, University of Kent

- Department of Communities and Local Government [DCLG] (2016) 'Homelessness statistics'. <https://www.gov.uk/government/collections/homelessness-statistics>
- Department of Culture, Media and Sport [DCMS] (2015) 'GVA of DCMS Sectors', statistics. <https://www.gov.uk/government/publications/ad-hoc-statistical-analysis-2015-quarter-4-gva-of-dcms-sectors/gva-of-dcms-sectors>
- Department of Health [DH] (2015) *NHS reference costs 2013 to 2014*. <https://www.gov.uk/government/collections/nhs-reference-costs>
- Dickerson M, Allcock C, Blaszczyński A, Nicholls B, Williams J, Maddern R (1996) *A preliminary exploration of the positive and negative impacts of gambling and wagering on Aboriginal People in NSW*, Australian Institute for Gambling Research
- Doley R (2000) 'Want to Make a Bet? Gambling and Crime in Australasia', *Critical Issues in Policing paper no 4*, Australian Centre for Policing Research
- Donoghue S (2000) 'A History of Gambling in the UK', Gambling Consultant website. <http://www.gamblingconsultant.co.uk/articles/a-history-of-gambling-in-the-uk-until-1960>
- Eurostat (2016) 'Hospital discharges and length of stay for inpatient and curative care', database. [http://ec.europa.eu/eurostat/web/products-datasets/-/hlth\\_co\\_dischls](http://ec.europa.eu/eurostat/web/products-datasets/-/hlth_co_dischls)
- Fisher S (1996) 'Gambling and problem gambling among casino patrons', report to a consortium of the British casino industry, University of Plymouth
- Gambling Commission (2015a) 'Industry statistics', webpage. <http://www.gamblingcommission.gov.uk/Gambling-data-analysis/statistics/Industry-statistics.aspx>
- Gambling Commission (2015b) *Trends in Gambling Behaviour 2008–2014*. <http://www.gamblingcommission.gov.uk/pdf/Trends-in-gambling-participation-2008-2014.pdf>
- GamCare (2016) *Annual Statistics 2015/16*. [http://www.gamcare.org.uk/sites/default/files/file\\_attach/GamCare%20Annual%20Statistics%202015-16.pdf](http://www.gamcare.org.uk/sites/default/files/file_attach/GamCare%20Annual%20Statistics%202015-16.pdf)
- GamCare (2008) *GamCare Care Services Report*, National Association for Gambling Care, Educational Resources and Training
- Global Betting Gambling Consultancy [GBGC] (2013) *Global Gambling Report – Raising The Stakes*, 8th edition
- George S and Bowden-Jones H (2014) *Gambling: the hidden addiction*, Faculty of Addictions Psychiatry, Royal College of Psychiatrists
- Gerstein D, Murphy S, Toce M, Hoffman J, et al (1999) *Gambling impact and behavior study: final report to the National Gambling Impact Study Commission*, National Opinion Research Center. <http://www.norc.org/pdfs/publications/gibsfinalreportapril1999.pdf>
- Gordon Moody Association (2015) *Impact Report*. [https://www.gordonmoody.org.uk/sites/default/files/GordonMoody\\_ImpactReport\\_2015\\_1.compressed.pdf](https://www.gordonmoody.org.uk/sites/default/files/GordonMoody_ImpactReport_2015_1.compressed.pdf)
- Griffiths MD (2006) 'An overview of pathological gambling', in Plante T (ed) *Mental Disorders of the New Millennium, Vol I: Behavioral Issues*, Greenwood
- Griffiths MD (2015) 'The Relationship Between Gambling and Homelessness: A Commentary on Sharman et al. (2014)', *Journal of Gambling Studies* 31(4): 1153–1159
- Griffiths M, Wardle H, Orford J, Sproston K, Erens B (2010) 'Gambling, alcohol consumption, cigarette smoking and health: Findings from the 2007 British Gambling Prevalence Survey', *Addiction Research and Theory* 18: 208–223
- Gentleman A (2016) 'Inside the NHS's only specialist gambling clinic', *Guardian*, 6 June 2016. <https://www.theguardian.com/society/2016/jun/06/gambling-secret-addiction-ruins-lives>
- Hansard (2013) 'Department for Work and Pensions response to parliamentary questions, HC Deb 6 February 2013, vol 558, col 352W'. <http://www.publications.parliament.uk/pa/cm201213/cmhansrd/cm130206/text/130206w0006.htm#130206119000011>
- Health Survey for England [HSE] (2013) *Health Survey for England – 2012*. <http://content.digital.nhs.uk/catalogue/PUB13218>
- Jazaeri SA, Bin Habil MH (2012) 'Reviewing Two Types of Addiction - Pathological Gambling and Substance Use', *Indian Journal of Psychological Medicine* 34: 5–11
- Lakey CE, Goodie AS, Lance CE, Stinchfield R, Winters K (2007) 'Examining DSM-IV Criteria for Pathological Gambling: Psychometric Properties and Evidence from Cognitive Biases', *Journal of Gambling Studies* 23: 479

- Langham E, Thorne H, Browne M, Donaldson P, Rose J and Rockloff M (2016) 'Understanding gambling related harm: A proposed definition, conceptual framework, and taxonomy of harms', *BMC Public Health* 16(80). <http://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-016-2747-0>
- Lesieur H and Rosenthal R (1991) 'Pathological gambling: A review of the literature', *Journal of Gambling Studies* 7(1): 5–39
- Lorains FK, Cowlshaw S, Thomas SA (2011) 'Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys', *Addiction* 106(3): 490–498
- Matheson F, Devotta K, Wendaferew A and Pedersen C (2014) 'Prevalence of Gambling Problems Among the Clients of a Toronto Homeless Shelter', *Journal of Gambling Studies* 30: 537
- May-Chahal C, Wilson A, Humphreys L and Anderson J (2012) 'Promoting an Evidence-Informed Approach to Addressing Problem Gambling in UK Prison Populations', *The Howard Journal of Criminal Justice* 51(4): 372–386
- McCrone P, Dhanasiri S, Patel A, Knapp M and Lawton-Smith S (2008) *Paying the Price: The cost of mental health care in England to 2026*, King's Fund. [https://www.kingsfund.org.uk/sites/files/kf/Paying-the-Price-the-cost-of-mental-health-care-England-2026-McCrone-Dhanasiri-Patel-Knapp-Lawton-Smith-Kings-Fund-May-2008\\_0.pdf](https://www.kingsfund.org.uk/sites/files/kf/Paying-the-Price-the-cost-of-mental-health-care-England-2026-McCrone-Dhanasiri-Patel-Knapp-Lawton-Smith-Kings-Fund-May-2008_0.pdf)
- McManus S, Meltzer H, Brugha T, Bebbington P and Jenkins R (2009) *Adult psychiatric morbidity in England, 2007*. <http://content.digital.nhs.uk/catalogue/PUB02931/adul-psyc-morb-res-hou-sur-eng-2007-rep.pdf>
- McManus S, Mowlam A, Dorsett R, Stansfield S, Clark C, Brown V, Wollny I, Rahim N, Morrell G, Graham J, Whalley R, Lee L and Meltzer H (2012) *Mental health in context: the national study of work-search and wellbeing*, Department for Work and Pensions research report 810
- Mental Health Foundation [MHF] (2013) *Starting today: The future of mental health services*. <https://www.mentalhealth.org.uk/publications/starting-today-future-of-mental-health-services>
- Ministry of Justice [MoJ] (2012) 'Criminal Justice Statistics, Sentencing tables', excel workbook. <https://www.theyworkforyou.com/wrans/?id=2013-07-01c.156721.h>
- Ministry of Justice [MoJ] (2016) 'Prison population figures: 2016 – Prison population: 30 September 2016', statistics. <https://www.gov.uk/government/statistics/prison-population-figures-2016>
- Muir R and Parker I (2014) *Many to many: How the relational state will transform public services*, IPPR. <http://www.ippr.org/publications/many-to-many-how-the-relational-state-will-transform-public-services>
- National Institute for Health and Clinical Excellence [NICE] (2010) *Alcohol-use disorders: preventing harmful drinking – Costing Report*. <https://www.nice.org.uk/guidance/ph24/resources/costing-report-67288285>
- National Gambling Impact Study Commission [NGISC] (1999) *National Gambling Impact Study Commission Final Report*. <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>
- New Economy (2015) 'Unit Cost Database'. <http://neweconomymanchester.com/our-work/research-evaluation-cost-benefit-analysis/cost-benefit-analysis/unit-cost-database>
- Nomis (2016) 'Advanced query', 'Annual Population Survey/Labour Force Survey', database. <https://www.nomisweb.co.uk/>
- Nuffield Trust, Health Foundation and the King's Fund (2015) 'Impact of the 2015 Spending Review on Health and Social Care: Written evidence for the Health Select Committee, on behalf of the Nuffield Trust, the Health Foundation and the King's Fund'. [http://www.kingsfund.org.uk/sites/files/kf/field/field\\_publication\\_file/Impact%20of%20the%202015%20Spending%20Review%20on%20health%20and%20social%20care%20\(joint%20submission\).pdf](http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Impact%20of%20the%202015%20Spending%20Review%20on%20health%20and%20social%20care%20(joint%20submission).pdf)
- Ofcom (2013) *Trends in advertising activity – Gambling*. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/53387/trends\\_in\\_ad\\_activity\\_gambling.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/53387/trends_in_ad_activity_gambling.pdf)
- Office for National Statistics [ONS] (2013) 'Annual Survey of Hours and Earnings'. <http://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2013-12-12>

- Office for National Statistics [ONS] (2014) 'Gross Value Added'. <https://www.ons.gov.uk/economy/grossvalueaddedgva>
- Office for National Statistics [ONS] (2016a) '91: Libraries, Archives, Museums & Cultural Activities: Weights:CVM'. <https://www.ons.gov.uk/economy/grossvalueaddedgva/timeseries/l4nf>
- Office for National Statistics [ONS] (2016b) 'Population Estimates for UK, England and Wales, Scotland and Northern Ireland: Mid-2015' <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>
- Office for National Statistics [ONS] (2016c) 'GDP deflators at market prices, and money GDP: November 2016 (the Autumn Statement)'. <https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp>
- Petry NM (2010) 'Pathological gambling and the DSM-5', *International Gambling Studies* 10: 113–115
- Potenza MN (2006) 'Should addictive disorders include non-substance-related conditions?' *Addiction* 101: 142–151
- Room R (2005) 'Banning smoking in taverns and restaurants: a research opportunity as well as a gain for public health', *Addiction* 100: 888–890
- Rose A, Maciver C and Davies B (2016) Nowhere fast: The journey in and out of unsupported temporary accommodation, IPPR. <http://www.ippr.org/publications/nowhere-fast-the-journey-in-and-out-of-unsupported-temporary-accommodation>
- Scottish Health Survey [SHS] (2014) *The Scottish Health Survey 2013: Volume 1: Main Report*. <http://www.gov.scot/Publications/2014/12/9982>
- Scottish Health Survey [SHS] (2016) *The Scottish Health Survey 2015: Volume 1: Main Report*. <http://www.gov.scot/Publications/2016/09/2764>
- Sharman S, Dreyer J, Aitken M, Clarke L, Bowden-Jones H (2014) 'Rates of Problematic Gambling in a British Homeless Sample: A Preliminary Study', *Journal of Gambling Studies* 31: 525
- Shelter (2012) *Immediate costs to government of loss of home*. [http://england.shelter.org.uk/\\_data/assets/pdf\\_file/0003/415596/Immediate\\_costs\\_to\\_government\\_of\\_losing\\_a\\_home.pdf](http://england.shelter.org.uk/_data/assets/pdf_file/0003/415596/Immediate_costs_to_government_of_losing_a_home.pdf)
- Slutske WS, Zhu G, Meier MH, Martin NG (2011) 'Disordered gambling as defined by the Diagnostic and Statistical Manual of Mental Disorders and the South Oaks Gambling Screen: evidence for a common etiologic structure', *Journal of Abnormal Psychology* 120(3): 743–751
- Stinchfield R (2003) 'Reliability, validity, and classification accuracy of a measure of DSM-IV diagnostic criteria for pathological gambling', *American Journal of Psychiatry* 160(1): 180–182
- Sussman S, Lisha N and Griffiths M (2011) 'Prevalence of the addictions: A problem of the majority or the minority?', *Evaluation & the Health Professions* 34: 3–56
- Thomas S and Jackson A (2008) *Risk and Protective Factors and Comorbidities in Problem Gambling, Report to beyondblue*, Monash University and the University of Melbourne
- Wardle H, Seabury C, Ahmed H, Payne C, Byron C, Corbett J and Sutton R (2014) *Gambling behaviour in England and Scotland – Findings from the Health Survey for England 2012 and Scottish Health Survey 2012*, Gambling Commission. <http://www.gamblingcommission.gov.uk/pdf/gambling%20behaviour%20in%20england%20scotland%2010072014.pdf>
- Welsh Problem Gambling Survey [WPGS] (2016) *Welsh Problem Gambling Survey 2015*. <http://www.gamblingcommission.gov.uk/Press/2016/New-survey-data-highlights-gambling-participation-and-problem-gambling-rates-in-Wales.aspx>
- Williams RJ, Royston J and Hagen B (2005) 'Gambling and problem gambling within forensic populations: A review of the literature', *Criminal Justice & Behavior: An International Journal* 32(6): 665–689
- Williams RJ and Volberg RA (2009) 'Impact of survey description, administration format, and exclusionary criteria on population prevalence rates of problem gambling', *International Gambling Studies* 9(2): 101–117