**Consultation on Proposals for Changes to Maximum Stake and Prize Limits for Category B, C and D Gaming Machines**

Response to the Consultation by Emeritus Professor Jim Orford, School of Psychology, University of Birmingham, Birmingham, UK/Founder Gambling Watch UK.

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My main comments relate to machine categories B2 (Question 13 and the paper attached as an appendix) and D, complex/reel-based (Question 26). I have also provided answers to a number of other questions.

Question 1 No comment

Question 2 I believe there is insufficient evidence on this at present. But, in any case, I think it may be unwise to tempt the gambling machine industry with the prospect of reduced 'blanket controls' by asking it to use its own tracking technology as a means of customer protection. There are surely a number of more fundamental issues to be faced about that: the conflict of interests involved in asking the providing industry to use for other purposes methods which were designed to increase customer loyalty and spend; the ethical and human rights issues involved in using a system of customer surveillance (nothing similar would, or could, be proposed in the case of other dangerous, commercially available, activities such as alcohol or tobacco consumption); and possible implications for the reputation of the gambling machine industry if such close observation of customers is seen as necessary in order to prevent harm. These are issues that require much more careful thought and public discussion.

Question 3 No comment.

Question 4 I agree with parts of Package 1, specifically those relating to machine Categories B3, C and D where all maximum stakes and prizes should, in my view, be kept as they are (see Questions 23 to 29).

Question 5 No, I do not agree with the rejection of Package 2. Where there is no special reason to hold maximum stakes and prizes at their present levels, increase in line with inflation seems the most appropriate basis for making proposals (this relates to machine Categories B1, B3A and B4 – see Questions 15 to 22). This would allow the value of stakes and prizes to be maintained. Increases greater than inflation would amount to real increases and would run the risk of an increase in problem gambling including gambling-related personal and family debt. It is very difficult to quantify that risk but, since we are still only a few years into the new era of liberalised gambling following the 2005 Gambling Act, and the evidence we do have from the 2010 British Gambling Prevalence Survey suggests that there may have been a 40 to 50% increase in the adult prevalence of problem gambling in only three years, we should be erring in the direction of precaution in the interests of preventing gambling-related harm.

Question 6 See my comments on the different categories of machines below.

Question 7 No. In the case of Category B1 machines, the industry proposal is for a massive 150% increase in both maximum stakes and maximum prizes. The government acknowledges that there is a need for greater industry reassurance about customer protection but it is hard to envisage what reassurances the industry could give about the possible effects of such large increases, way beyond inflation, on gambling-related harm.

Question 8 No comment.

Question 9 No. See Question 7.

Question 10 No comment.

Question 11 Increases in line with inflation only.

Question 12 See my comments on this above (in answer to Question 2).

Question 13 Maximum stakes for B2 machines should be *reduced* to bring them into line with other gambling machines located in highly accessible venues such as betting shops. The maximum stake should be £2 as for other machines. There is now sufficient evidence to suggest that B2 machines in their present form and location may be particularly harmful. The evidence of harm falls into three categories as follows:

1. *B2s combine a number of features which would lead us to expect them to be particularly dangerous.*

Like other gambling machines, which are recognised the world over to be more addictive than most other forms of gambling, they allow for rapid play and are programmed to pay out on a schedule designed to encourage continued play. Their harmfulness is mitigated to some extent by keeping the maximum allowed stake low (£2 or less for other gambling machines in Britain). Unlike all other types of gambling machine, B2s (FOBTs) allow for much higher stakes, up to £100. Until they appeared in British betting shops a few years ago, such high stake, continuous machine gambling was unknown on British high streets. Everything that is known about gambling and problem gambling should have led us to expect that they would be particularly dangerous. It is rather like making legally available a new drug which combines the chemical properties of several existing drugs known to be addictive. No proper impact assessment was carried out when B2s were introduced. The 2012 report of the DCMS Committee's investigation of the 2005 Gambling Act recognised this when they referred to FOBTs as 'hard gambling'. That report acknowledged that their presence on the high street was contrary to the regulatory principle, which they referred to as the ‘regulatory pyramid’, whereby the ‘harder’ forms of gambling should be confined to venues, such as casinos, which were less easily accessible to the general public.

2. *The 2010 British Gambling Prevalence Survey showed a high percentage of B2 players to have gambling problems and roughly a quarter of all takings from B2s to come from people with such problems.*

The results of the 2010 British Gambling Prevalence Survey (BGPS) showed, as expected, that a relatively high percentage of those who reported playing B2s at any time in the last 12 months answered questions about problems related to their gambling which put them above the internationally recognised threshold for 'problem gambling' (9% compared to, for example, 4% for other kinds of gambling machine). For those reporting playing B2s at least monthly, problem gambling prevalence rose to 13%. High though those figures are, they underestimate the amount of B2 gambling which constitutes problem gambling. Secondary analysis of BGPS 2010 data, accepted for publication in an academic peer reviewed journal (*International Gambling Studies*), has estimated that approximately 23% of all takings from FOBTs (stakes minus payouts) are contributed by people who are above the problem gambling threshold (compared to, for example, an estimated 12% for arcade machines and 11% for casino table games) (a copy of this paper is attached as an appendix to the present submission). Further important evidence comes from a secondary analysis of data from the 2007 British Gambling Prevalence Survey. A team from the USA showed that, once a measure of total gambling engagement (the number of separate forms of gambling which a person had engaged in during the last 12 months) was allowed for statistically, B2 machine gambling was the only form of gambling which retained a statistically significant association with problem gambling (LaPlante et al, *European Journal of Public Health*, 2009).

3. *People who have developed addictions to B2 machines, and their families, are increasingly making themselves known to treatment agencies and through media and website channels.*

Problem gambling is notorious for being one of the most hidden addictions. However, recent attention given to the dangers of B2s has encouraged individuals and their family members, despite the stigma still associated with problem gambling, to talk openly about their FOBT addictions – see, for example, the *Real Life Stories* on the Gambling Watch UK website, or the recent live discussion on BBC Radio 5 Live (9 a.m., Friday, January 11, 2013). At the same time, those organisations which provide services for people with gambling problems and their families, such as GamCare and the National Problem Gambling Clinic, are reporting that large numbers of their clients and patients have been experiencing problems with B2s.

Question 14 The other way of reducing harm from B2 machines would be to confine them to casinos where harm mitigation regulations are tightest. Although it was not what they actually recommended, this would be the logical conclusion of the 2012 DCMS Committee argument that ‘harder’ forms of gambling should be confined to locations with tighter restrictions and less easy access for the general public.

Question 15 Yes, I agree with the government's proposals to retain the current maxima for B3 machines.

Question 16 No comment.

Question 17 No. In the case of Category B3A and 4 machines, the Government response is accepting of industry proposed increases on the grounds that these machines are largely confined to clubs, which minimises any harm. However, this ignores the fact that children and young people will often accompany adults into clubs where they may witness parents and other adults gambling and may even join adults in playing. Clubs are less well controlled gambling environments than others and may not be such safe environments as might be supposed; increases in line with inflation only would be consistent with maintaining the value whilst following a precautionary principle regarding possible harm.

Question 18 No comment.

Question 19 Inflation rises only at most. Inflation would suggest a rise in maximum stake only to £1.22 (see Package 2). The suggested rise to £2 is a 100% rise. A maximum of £1.20, although it may appear awkward, is after all only a maximum and no customers are required to stake that exact amount.

Question 20 No, for the same reasons given in answer to question 17.

Question 21 No comment.

Question 22 Increases in line with inflation i.e. to a maximum stake of £1.20 and a maximum prize of £300.

Question 23 No, I do not agree with the government’s response regarding Category C machines. They are to be found in some of the venues most accessible to the general public and in my viewthere should be no increases following the 100% increases in maximum stakes and prizes in 2009.

Question 24 No comment.

Question 25 My main argument about Category D machines is set out in answer to Question 26 about reel-based machines which are the most serious because of their similarity to adult gambling machines. Some of the same argument applies to other types of Category D machine such as crane grabs and coin pushers. There were some very considerable increases in maxima in 2009, so no further increases so soon are justified. They should remain as they are.

Question 26 No, no increases because of the exposure of children and young people to these machines in FECs. Category D machines were one of the most controversial aspects of the 2005 legislation for the simple reason that Britain, uniquely amongst countries that have a systematic set of gambling regulations in place, continues to allow children of any age to play such machines. Not surprisingly, therefore, the Gambling Review Body (GRB), whose recommendations formed the basis for the 2005 Act, expressed great unease on this issue. They were persuaded that machine gambling could be particularly dangerous for young people and stated: ‘… if we were creating the regulations for the first time, we would certainly recommend that no gaming machines should be played by under 18s’(report of the Gambling Review Body, 2001, paragraph 23.23).

If children and young people are to continue to be allowed to play the kinds of money-prize Category D machines, which in all essential respects are like other categories of slot machine, then it is important that the kind of harm which the Gambling Review Body feared, is prevented as much as possible by keeping maximum stakes and prizes as low as possible.

Adolescents are a high risk group for problem gambling; in fact the special vulnerability of adolescents to compulsive gambling is one of the better established facts in the problem gambling field. It is machine gambling that has caused most of the juvenile problems. (These conclusions are based on research carried out over a number of years in the UK, in a number of studies carried out in several other European countries, and the USA and Canada).

In the cases of alcohol, tobacco and drug use and misuse, the evidence is very clear that the earlier the use of a substance begins in childhood or adolescence, the more likely it is that a young person will use the same and other substances later on and the more likely is the later experience of heavy or problematic use. It is for that reason that much of the effort devoted to trying to prevent substance misuse is directed at trying to delay the initiation into use of substances in adolescence. What evidence there is for gambling suggests, similarly, that starting gambling early in childhood or adolescence puts young people at greater risk of subsequent gambling problems.

If there is any decline in the popularity of these machines I believe that is something we should welcome and we should be looking forward to the time when Britain would come into line with other jurisdictions and would phase out these machines altogether (or at least the presence of such machines in any venue to which under-18s have access).

Question 27 No, no change. See my answer to question 25. There were some very considerable increases in maxima in 2009, so no further increases so soon are justified. They should remain as they are.

Question 28 No comment.

Question 29 No changes to maximum stakes or prizes for Category D crane and coin push machines and particularly not in the case of reel-based machines.

Question 30 My general criticism of the approach taken to the impact assessment is that it rests too heavily upon the economic costs and benefits to the gambling machine providing industry. A fuller impact assessment taking into consideration all the different costs and benefits to the nation is of course a much more complicated exercise (perhaps beyond the capacity of a single government department, which is why I believe a proper national strategy for gambling should certainly involve the Department of Health and perhaps other departments also). The most complete gambling cost-benefit analysis for any one state was carried out in Australia (Australian Productivity Commission, 1999, Australia's Gambling Industries. Report number 10, Canberra: Ausinfo). The following are some of the costs associated with gambling which were considered in that report or by others who have considered this matter carefully:

1. Crime associated with problem gambling (police, court and prison costs)
2. Crime associated with gambling generally (e.g. corruption in sport, money laundering)
3. Employment costs associated with problem gambling (lost productivity, lost employment time, employer staff recruitment costs)
4. Business costs associated with new gambling facilities (displacement of other businesses)
5. Bankruptcy (legal and other costs)
6. Personal costs to those with gambling problems (psychological and physical illness, loss of earnings, etc)
7. Costs borne by affected family members (emotional distress, psychological and physical illness, family abuse and neglect, other family impact)
8. ‘Abused dollars’ (money or possessions acquired from family, friends or employers under false pretences)
9. Treatment and social service costs associated with problem gambling (unemployment and other social benefits, treatment costs etc)
10. Damage to the environment (e.g. traffic congestion, crowding and noise, change of the character of an area, loss of local control)
11. Costs associated with government regulation of gambling

Question 31 No comment.

Question 32 No comment.

Question 33 No comment.

Question 34 For the same reasons given above (Question 26), there should be no increases to maximum prizes in venues where under-18s can be present such as FECs and bingo establishments which allow under-18s. Where under-18s are not admitted, any increases in maximum stakes and prizes should be in line with inflation only. The evidence suggests that anything that makes it easy for children to accompany adults on outings that involve witnessing their elders gambling, and at the same time makes it easy for children to gamble in a similar way on the same occasion, is running the risk of providing the very set of circumstances that puts children at risk. Bingo clubs may constitute a set of premises where, because of liberalisation, the protection of children and young people has become more difficult. Where children and young people can be admitted, bingo halls constitute a place where young people might readily be introduced to gambling.

Question 35 No comment.

APPENDIX

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**What Proportion of Gambling is Problem Gambling? Estimates from the 2010 British Gambling Prevalence Survey**

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**Abstract**

The paper reports secondary analysis of data from the 2010 British Gambling Prevalence Survey, a household survey of a representative sample of the population aged 16 years and over (N = 7756). Responses to questions about frequency of gambling and average monthly spend on each of 15 forms of gambling, and responses to two different problem gambling screens (DSM-IV and PGSI), were used to derive estimates, for each form of gambling separately, of the percentage of (1) all days play (two estimates), and (2) all spend (four estimates), attributable to problem gamblers. Although these estimates must be treated as approximations only, they demonstrate that problem gamblers make a far greater contribution to total gambling attendances and losses than problem gambling prevalence figures would suggest. There are certain forms of British gambling to which problem gamblers may be contributing as much as 20-30% of all days play and spend, and moderate risk gamblers a possible further 10-20%.

**Introduction**

To answer the question ‘What proportion of gambling is problem gambling?’ it is customary to ask a representative sample of the general population to answer a number of questions that constitute a screening instrument for the detection of problem gambling. To date, three British Gambling Prevalence Surveys (BGPSs), carried out in 1999/2000, 2006/07 and 2009/10, have used such an approach (Sproston, Erens & Orford, 2000; Wardle et al., 2007; Wardle et al., 2011). In each of those surveys, two problem gambling screening instruments were employed. For the most recent 2010 survey, they comprised a 10-item scale based on the fourth edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV: American Psychiatric Association, 1994) and the nine-item Canadian Problem Gambling Severity Index (PGSI: Ferris & Wynne, 2001). These produce estimates of the proportion of the adult population who are thought to have been above the threshold for problem gambling during the last 12 months.

Those prevalence estimates from the 2010 British Gambling Prevalence Survey (BGPS10) data were 0.9% (+/- 0.3) according to the DSM-IV scale and 0.7% (+/- 0.3) according to the PGSI (Wardle et al., 2011). These are arguably large figures in public health terms. They equate to around one-third to a half million adults in Britain and in magnitude they are similar to or greater than figures for other physical or mental health problems that are taken more seriously and for which it is expected that sufficient services of good quality are available in all areas of the country (e.g. addiction to opiate drugs). In percentage terms, the problem gambling prevalence estimates from BGPS10 are larger still if the roughly one-quarter of the population who report having engaged in no gambling at all in the previous 12 months are excluded (1.3% and 1.0% according to the DSM-IV and PGSI scales respectively).

However, those estimates constitute only one approach to estimating what proportion of gambling is problem gambling. For instance, the proportion of individuals in the general population who have recently experienced gambling problems is not necessarily the same as the proportion of the clientele of gambling establishments who have gambling problems. It is reasonable to assume that problem gamblers visit gambling establishments more frequently than non-problem gamblers and, therefore, that the proportion of customer attendances made by players who have gambling problems would be greater than the proportion of problem gamblers in the general population. For example, on the basis of her study of a representative sample of forty British casinos, Fisher (1996, 2000) estimated that of all those people who frequented British casinos at any time in a single year, around 7% had gambling problems, a figure more than ten times higher than the 1999/2000 BGPS general population estimate of the prevalence of problem gambling among all adults. However, the figure was even higher if the fact that casino patrons with gambling problems visited casinos more frequently than casino clients without such problems was taken into account. Fisher estimated that at any one time, around 16% of patrons present in the casinos were likely to have gambling problems.

If the overall question posed in the present paper is interpreted to mean ‘What proportion of operator takings are contributed by those with gambling problems?’, then the answer is likely to be different again. If, as might be assumed, those customers with gambling problems, when they are present in a gambling establishment or when engaged in gambling, contribute disproportionately much to gambling operator takings, then the proportion of gambling which is problem gambling might appear to be even greater. This way of critically examining the question has been most thoroughly adopted in the report of the Australian Productivity Commission (APC, 2010). That report used data from seven different Australian state surveys carried out between 2003 and 2009, and used seven different methods of estimating the proportion of gambling spend contributed by those with gambling problems. This produced twelve independent estimates ranging from 26% to 54% with a median of 36%. These figures are the best estimates available and they indeed suggest that the proportion of gambling operator takings that come from problem gamblers can, in some circumstances, be very substantial – estimated to be perhaps of the order of one-third, and therefore significantly higher than the percentage of problem gamblers in the general population.

However, the Australian figures have a number of limitations. The first, which is particularly a limitation for those in other countries such as Britain, is the concentration of the Australian analysis on play on electronic gaming machines (EGMs) of the ‘poker machine’ type which are widespread in most Australian states and territories and which have caused great concern in Australia. Gambling opportunities in Britain are very diverse and it must be presumed that answers to the question posed here will vary considerably from one form of gambling to another. It might be supposed, for example, that problem gambling and problem gamblers would be more prominent in table game casino gambling than gambling on a bi-weekly lottery draw. The APC (2010) report cites supportive evidence from Canadian provincial surveys that estimated the proportion of gambling revenues derived from problem gamblers to lie between 19% and 33%, averaging 28% (Wood & Williams, 2004).

Further limitations of the Australian estimates relate to the assumptions that were necessary in order to arrive at estimates. None of the seven estimation methods was free of such assumptions. Several of the methods relied on respondents’ answers to questions about losses (their biggest loss; the number of times they lost AU$50 or more last year; and loss within the last gambling session), or questions about EGM playing style (including numbers of lines, credits and sessions), with assumptions then required about how those answers translated into spend. The most direct method, possible in the case of one data set only, used players’ own estimates of their spend, but the estimate asked for was that of annual spend, which given limitations about recall accuracy can only be very approximate. The main difficulty in estimating the proportion of takings attributed to problem gamblers lies in the notorious conceptual and measurement difficulties associated with estimating gambling ‘spend’ (Blaszczynski, Dumlao & Lange, 1997; Blaszczynski, Ladouceur, Goulet & Savard, 2006, 2008; Wardle et al., 2007). It cannot be assumed with any certainty that when respondents provide answers to questions about spending on gambling, that they are providing accurate answers that can be interpreted as net spend (i.e., stakes minus winnings) which can be equated with operator takings.

The BGPS10 data provide the best opportunity to date, to attempt an answer for Britain to the question about the proportion of gambling that is problem gambling. For the first time in the earlier 2006/07 survey, respondents were asked to estimate, for each form of gambling separately, how frequently they had engaged in gambling in the 12 months prior to the survey. In the 2010 survey, for the first time, those engaging in a form of gambling at least monthly, were asked in addition to estimate how much on average they spent on that form of gambling per month. Although a number of assumptions (to be described later) have to be made, these data enable rough estimates to be made, for 15 separate forms of gambling, of the proportion of gambling attendances, and operator takings, contributed by problem gamblers. Use of the PGSI also allows estimates to be made of proportions of attendances and takings attributable to those in the ‘moderate risk’ gambling category. The APC (2010) report produced estimates of spend between 7% and 26% (median 20%) attributable to moderate risk gamblers.

**Method**

*The 2010 British Gambling Prevalence Survey (BGPS10)*

BGPS10 was a survey of a nationally representative sample of people aged 16 years and over living in private households in England, Scotland and Wales, carried out for the Gambling Commission (the British gambling regulator) by the *National Centre for Social Research* (*NatCen*). The sampling frame was the small user Postcode Address File. Twenty-five addresses were randomly selected from each of 391 postcode sectors selected to be nationally representative in terms of region, socio-economic category and proportions of white/non-white ethnic groups. In total, 8,791 residential addresses were selected. Each address was then visited by an experienced and fully briefed *NatCen* interviewer who attempted to gain a face-to-face interview with an adult at that address to collect information about the household. Such interviews were achieved at 4,842 households (a response rate of 55.1%). Computer-assisted self-completion questionnaires were completed by 7,756 (out of 9,104) people residing within those households (an individual response rate of 85.2%). The overall response rate is therefore 46.9% which may be a conservative estimate since non-responding households are likely to contain fewer adults. The survey was entitled ‘Leisure time: lottery and recreation study 2010’. The data were collected between November 2009 and June 2010.

The present analysis is based on responses to the following questions:

*Frequency of engagement in each form of gambling in the last twelve months.* This question was asked of each of the 15 forms of gambling shown in Tables 1-4 with the following eight response options:

Everyday/almost every day; 4-5 days a week; 2-3 days a week; about once a week; 2-3 days a month; about once a month; 6-11 times a year; 1-5 times a year.

A sixteenth form of gambling (spread betting) was also asked about, but results are not included here because of the small numbers of respondents who reported this type of gambling. The exact form of each question was designed to clarify the distinctions between the different forms of gambling. For example, the exact form of the question about poker was as follows:

In the last twelve months, how often have you spent money playing poker in a pub tournament/league or at a club? Do not include: any poker played online, in a casino or privately with friends/family/others.

*Amount of money usually spent in a month.* That question was asked separately for each of the 15 forms of gambling. In each case, the question was only asked of those respondents who had indicated that they had engaged in that form of gambling at least once a month in the last year. The question about betting on dog races, for example, was as follows:

In a month, how much money do you usually spend betting on dog races? Include: money spent online with a betting exchange or with a bookmaker.

For 10 of the 15 forms of gambling, the following seven response options were provided:

£1-£10; £11-£30; £31-£50; £51-£100; £101-£200; £201-£500; £501 or more.

The exceptions were fixed odds betting terminals (FOBTs), horse races, sports betting, casino games, and poker, for which the following eight options were provided:

Less than £10; £10-£50; £51-£100; £101-£200; £201-£300; £301-£500; £501-£1,000; £1001 or more.

*DSM-IV-based problem gambling scale.* The 10-item scale used in BGPS10 and the two previous BGPSs (Sproston et al, 2000; Wardle et al, 2007). Items asked about ‘the last 12 months’. Each item represents one of the 10 DSM-IV diagnostic criteria. Meeting three or more of the criteria was required for categorisation of a respondent as a problem gambler.

*PGSI problem gambling scale*. The nine-item Problem Gambling Severity Index (Ferris & Wynne, 2001) used in BGPS10 and in the earlier 2006/07 BGPS (Wardle et al., 2007). Items ask about ‘the past 12 months’. Response options are:

Almost always; Most of the time; Some of the time; Never (scored 3,2,1,0 respectively)

Scores are summed across all items and scores of 8 or more are required for categorisation of a respondent as a problem gambler. Scores of 3 to 7 result in categorisation as a ‘moderate risk’ gambler, a group thought to be at elevated risk of experiencing adverse consequences from their gambling (Ferris & Wynne, 2001; Wardle et al., 2011).

The psychometric properties of both problem gambling scales, as used in the 2006/07 BGPS, have been reported previously (see Orford et al., 2010).

*Analysis*

The aim of the analysis was to arrive at an estimate, for each form of gambling separately, of the contribution problem gamblers (and moderate risk gamblers) make to (1) the total number of attendances or occasions of play by all players (or, to be more exact, the total number of days play), and (2) the total amount spent by all players. Three sets of estimates were calculated: days and spend attributable to DSM-IV scale problem gamblers; those attributable to PGSI problem gamblers; and those attributable to PGSI problem gamblers plus moderate risk gamblers. In each case, a single estimate of the attributable percentage of days play, and two separate estimates of the attributable percentage of spend, were calculated, as follows:

1*. Estimate of the percentage of all days play attributable to problem (and moderate risk) gamblers.* This involved first converting the eight responses to the frequency question to approximate numbers of days play in 12 months by applying the multipliers 312, 234, 130, 52, 30, 12, 8.5 and 3 and then calculating the total days play by problem gamblers as a percentage of days play by all players. The calculation is straightforward. For example, in the case of sports betting, 16 respondents indicated that they bet every day or almost every day, with four respondents defined as problem gamblers on the DSM scale. Using the multiplier 312, this equated to 1248 days of play per year for DSM problem gamblers out of a total 4,992 days. Seventy-seven sports bettors reported betting about once a month, with three respondents defined as problem gamblers on the DSM scale, which, using the multiplier 12, equated to 36 out of 924 days attributable to problem gamblers. Summing across all eight frequency response categories resulted in a total of 3,997 days per year for DSM problem gamblers out of a total of 25,838, producing an estimated percentage of days attributable to DSM problem gamblers of 15.5%.

2A. *Estimate of the percentage of all spend attributable to problem (and moderate risk) gamblers, by adjusting the prevalence of problem (and moderate risk) gambling for the differential spend of problem (and moderate risk) gamblers and others (estimate A).* Figures for the problem (and moderate risk) gambling prevalence for each form of gambling separately have been reported previously (Wardle et al., 2011). For example, 4.4% of all respondents who reported betting on sports events in the 12 months prior to the survey scored above the threshold for problem gambling on the DSM scale. These prevalence figures were used as the basis for arriving at the first estimate of spend attributable to problem gamblers. To arrive at those estimates, the prevalence figures were adjusted (mostly upwards) to allow for the fact that those scoring as problem gamblers reported a different average monthly spend (mostly more) than others. These calculations were relatively straightforward. For example, in the case of sports betting, the eight spend response options were assigned the values £5, £30, £75, £150, £250, £400, £750, and £1,000, and the average monthly spend of problem gamblers and non-problem gamblers was calculated. The average monthly spend on sports betting of 30 DSM scale problem gamblers was found to be just under £93 and that of non-problem gamblers £36. The ratio of these two figures, 2.58, was therefore used as the multiplier to convert the DSM sports betting problem gambling prevalence of 4.4% into an estimated attributable spend of 11.3%.

2B. *Estimate of the percentage of all spend attributable to problem (and moderate risk) gamblers, by adjusting (downwards) the figures for attributable percentage days play, to allow for the possibility that those who play most frequently spend on average less per day (estimate B).* This calculation was less straightforward. The data showed that, in the case of all forms of gambling, those who indicated gambling most frequently, which usually included a disproportionately large number of problem gamblers, made estimates of monthly spend suggesting that they spread their spend over a larger number of occasions than did those who gambled less frequently. For example, in the case of sports betting, the 16 respondents who reported betting everyday/almost every day, reported spending an average of just over £43 per month, which, divided by 26 (the six frequency response options of once a month or more were equated to 26, 19, 11, 4, 2.5 and 1 days per month), suggested an average spend per person, per day of £1.66. The 77 sports betters who indicated betting about once a month, reported an average monthly spend of £20.39, equating to £20.39 per day, or more than 12 times the estimated daily spend of the most frequent betters. Similar gradients existed for all forms of gambling although for sports betting it was one of the steepest. The next step in arriving at these estimates was to weight the figures for percentage of all days attributable to problems gamblers in each frequency category by the average daily spend for that frequency category. For example, in the case of sports bettors who reported betting everyday/almost every day, the proportion of days attributable to DSM scale problem gamblers (1,248/4,992 – see above) was therefore multiplied by £1.66 to estimate the contribution of the most frequent DSM problem gamblers to total spend. Similarly for those reporting betting about once a month, the attributable proportion of days (36/924 – see above) was multiplied by £20.39. (A complication was that there was no estimate of spend for those gambling less than once a month. The assumption was therefore made that the same gradient would continue, such that the least frequent gamblers [less than once a month] would spend on average the most per day of gambling. For example, in the case of sports betting, figures of £25 and £30 per betting day were assigned, respectively, to those reported sports betting 6-11 times a year and 1-5 times a year). Summing these products across the eight frequency categories produced the figures £19,343/£209,180, equivalent to an estimate of attributable spend of 9.3%.

**Results**

*Estimates of the Percentage of All Days Play on Different Gambling Activities Attributable to Problem Gamblers*

The second column of figures in Table 1 displays these estimates using the DSM-based scale as the measure of problem gambling, and the equivalent figures in Table 2 show the estimates using the PGSI. Those two sets of estimates have been averaged to produce a set of best estimates of percentage of days play attributable to problem gamblers, shown in the first column of figures in Table 3. These estimates fall roughly into four groups. First, there are three forms of gambling where the estimate of days play attributable to problem gambling exceeds 20%: casino games (31%), FOBTs (26%) and dog races (22%). There then follows a group comprised of seven forms of gambling for which these estimates lie between 12% and 18%: poker, online slot machine style games, sports betting, betting on non-sporting events, slot machines, private betting, and horse races. The third group, that includes football pools, scratchcards, and bingo, is associated with estimates between 5% and 8%. Finally, estimates for other lotteries and the National Lottery are 2% to 3%.

Insert Tables 1 - 3

These estimates are dependent on two factors. The first is the relative concentration of problem gamblers amongst participants in a particular form of gambling (the prevalence of problem gambling for that form of gambling). It can be seen by comparing these estimates with the problem gambling prevalence figures (previously reported by Wardle et al., 2011 and reproduced here in the first columns of figures in Tables 1 and 2), that the rank order of the different forms of gambling is quite similar. For example, the National Lottery has the lowest rank for both prevalence of problem gambling and for percentage of all days play attributable to problem gamblers, while FOBTs have one of the highest ranks for both. The rank order correlation is not perfect however (0.78 for DSM data, 0.88 for PGSI data). This is a reflection of the operation of the second factor on which estimates of attributable days are dependent: the differential frequency of engagement in a form of gambling by problem and non-problem gamblers. Frequency of engagement was greater for problem than non-problem gamblers in the case of each of the 15 separate forms of gambling. Hence the figures for attributable percentage of days play are greater in all cases than the equivalent percentage prevalence figures. For example, Table 2 shows that, whereas the prevalence of PGSI problem gambling amongst sport betters is 4.8%, the percentage of daily attendances for sports betting attributable to DSM problem gamblers is 14.1%, a multiplier of nearly three. The multipliers for most forms of gambling are in the region of 2-4. However, some multipliers are smaller than 2 and others greater than 4, which accounts for the lack of a perfect rank order correlation between prevalence and attributable percentage days play.

Football pools are one of the clearest examples of a low multiplier. For example, Table 1 shows that the prevalence of DSM scale problem gambling amongst football pools betters is 7.5% and the attributable percentage of days play is not much higher at 9.8%, due to the fact that the majority of football pools bettors, both problem and non-problem gamblers, bet once a week. The clearest example of a relatively large multiplier is that of casino games. Table 2 shows the prevalence of PGSI problem gambling amongst casino games players to be 5.6% (only the sixth highest prevalence amongst the 15 forms of gambling), whereas the estimate of attributable percentage of days is as much as 29.5%. That is due to the fact that just over 50% of problem gamblers who played casino games reported doing so more than once a week whereas the majority of non-problem gambling casino games players reported gambling less than six times a year.

*Estimates of the Percentage of All Spend on Different Gambling Activities Attributable to Problem Gamblers*

Four separate estimates of the percentage of all spend attributable to problem gamblers were calculated: two using the DSM scale for assessing problem gambling (shown in the last two columns of Table 1) and two using the PGSI (last two columns of Table 2). The four estimates have been averaged to produce the best estimates shown in the final column of figures in Table 3. Two forms of gambling, betting on dog races and FOBTs, stand out amongst those best estimates, with estimated percentages of spend attributable to problem gamblers which are considerably greater than the estimates for all other forms of gambling (dog races 27%; FOBTs 23%). There then follows a group of six forms of gambling for which the best estimate is between 10% and 12% (slot machines, betting on non-sporting events, online slot machine style games, poker, casino games, and sports betting). Lying between 4% and 7% are estimates for a further five forms of gambling: betting on horse races, scratchcards, football pools, private betting, and bingo. Finally, estimates for the National Lottery and other lotteries are both between 1% and 2%.

As was the case for estimates of the percentage of days play attributable to problem gamblers, the rank order of forms of gambling in terms of estimates of percent of spend attributable to problem gamblers is similar to, but not identical with, the ordering according to the prevalence of problem gambling associated with each activity (rank order correlation with DSM prevalence = 0.73; with PGSI prevalence = 0.85). The most notable discrepancies are betting on dog races which achieves the highest value for estimated attributable percentage spend but only the sixth and fourth ranks for prevalence according to the DSM-based scale and PGSI respectively; and slot machine playing which achieves the third rank for percentage of attributable spend but only the ninth rank for prevalence (both DSM and PGSI). Further inspection of the figures in Tables 1 and 2 shows that this effect is due to relatively high estimates of attributable percentage of spend based on weighting the prevalence figures according to the differential reported spend of problem gamblers and non-problem gamblers (the first estimates [estimates A], shown in the penultimate columns of Tables 1 and 2). For each of those two forms of gambling, problem gamblers reported spending four or five times as much per month as non-problem gamblers (slot machines) or six times as much (betting on dog races). In the other direction, estimates of attributable percentage spend are relatively low for football pools compared to prevalence. Although problem gamblers are relatively more likely to engage in football pools gambling than they are to engage in, for example, horse race betting, they report spending no more in a month on the football pools (in fact slightly less) than do non-problem gamblers.

*Estimates of the Percentage of All Days Play and All Spend Attributable to PGSI Problem and Moderate Risk Gamblers Combined*

Insert Table 4

Estimates using the PGSI and a score on that scale of 3 and above in order to include both problem gamblers (scores of 8 and above) and moderate risk gamblers (scores of 3 to 7) are shown in Table 4. Again rank orders of forms of gambling in terms of percent of days play and percent of spend attributable to problem and moderate risk gamblers are similar to one another and similar to the order in terms of prevalence of problem gambling and moderate risk gambling combined (attributable percentage days play = 0.82; attributable percentage spend = 0.83). The sizes of these estimates are of course higher than those shown in Tables 1-3 because those in Table 4 are based on a much larger group of gamblers (both problem and moderate risk gamblers as opposed to problem gamblers alone). Estimates of percentage attributable days play vary from around 6% (other lotteries) to 40% (casino games, dog races, and FOBTs). Playing casino games again stands out as being the form of gambling with the highest estimated percentage attributable days play (42%) but a lower figure (average of estimates A & B, 23%) and a much lower rank order (7th) for percentage attributable spend. This is because, unlike some other forms of gambling such as betting on non-sporting events that shows the opposite pattern, problem and moderate risk gamblers reported attending casinos relatively frequently but spending only moderately more highly compared to other gamblers (an average of £120 per month versus just under £80), thus producing a relatively lower estimate A for attributable spend; and high frequency casino attendees (more than once a week) reported spending a similar amount per month as low frequency attendees (about once a month), thus producing a relatively low estimate B.

**Discussion**

This is the first time to the authors’ knowledge that an attempt has been made, using British data, to estimate the proportion of gambling that involves gamblers who have gambling problems. Although the data and the analysis for this paper have a number of limitations (see below), the present analysis has a number of clearly evident strengths. More specifically, two separate definitions of the proportion of gambling associated with problem gambling were employed: the proportion of gambling days attributable to problem gamblers; and the proportion of spend attributable to problem gamblers. Two alternative ways of calculating the attributable proportion according to the second of those definitions were employed and the results have been shown separately and combined. All analyses were carried out twice, once using the DSM-IV-based scale to categorise gamblers as problem or non-problem gamblers, and once using the alternative PGSI method. In addition, the PGSI enabled a further set of analyses to be carried out which included ‘moderate risk’ gamblers. Finally, all analyses were carried out separately for 15 different forms of gambling. In a number of these respects the present analysis represents an advance on the most comprehensive previous attempt to estimate what proportion of a nation’s gambling might be problem gambling, carried out in Australia by the Australian Productivity Commission (APC, 2010).

As expected, estimates of the proportion of gambling attributable to problem gamblers varied greatly by type of gambling, from a low of 1-2% for the National Lottery and other lotteries to 20-30% for FOBTs and dog races. Estimates of attributable spend were consistently somewhat lower than estimates of attributable days play (although dog races was an exception). The lower figures for spend appear to be due to frequency of play being a stronger differentiator of problem and non-problem gamblers than was reported monthly spend (which affects the first estimate of attributable spend) and the consistent trend in the data for the most frequent players to spread their spending over a larger number of days than was the case for less frequent players, hence spending less per gambling day (which affected the second estimate of spend). The most notable discrepancy between estimates of days and spend attributable to problem gamblers was for casino games. Although problem gamblers who played casino games were much more likely than others to play them very frequently, neither they nor frequent casino games players as a whole reported spending a great deal more than others. This might be because occasional casino games players are those who spend most when they do play and/or because frequent players experience a less unfavourable balance of losses over wins when they play.

When estimates are made of the days and spend attributable to problem and moderate risk gambling combined, using the PGSI scale (which theoretically assumes that gambling and problem gambling lie on a continuum), then estimates are necessarily greater, varying from a low of 5-6% for other lotteries to around 40% for dog races and FOBTs. Again casino games stands out as a form of gambling with an estimate of attributable days of the same order as dog races and FOBTs but with a substantially lower level of attributable spend. Poker showed a similar pattern but to a lesser degree.

Although our estimates are lower than those reported by the APC (2010) for the kinds of gambling machines to be found in most Australian states, some of the present figures are very substantial. They suggest that, with the exception of the National Lottery, other lotteries, scratchcards, football pools, bingo and possibly private betting, problem gamblers account for at least 10-15% of all other types of gambling, with estimates rising to between 20-30% for certain forms of gambling. If moderate risk gamblers are included in the calculations, those figures are increased to 15-30%, rising to around 40% for some forms of gambling. These figures provide a different perspective on the question posed in this paper. Simple prevalence figures such as those reported in the BGPS10 (Wardle et al., 2011) under-estimate the contribution that problem gambling makes to the gambling environment and to gambling takings. Whereas the proportion of the whole adult population categorised as problem gamblers in BGPS10 was 0.7% or 0.9% (according to the PGSI and DSM-based scales respectively), or 1.0% or 1.3% as a proportion of all those who gambled in the last year, the present results suggest that problem gambling is a much more prominent influence in the day-to-day conduct of most forms of British gambling. On any given day, the analysis presented here suggests substantial proportions of those engaged in gambling have gambling problems and substantial proportions of takings are likely to come from problem gamblers. For example, using gambling industry statistics available from the Gambling Commission (2008/09), gross profits from gambling machines in arcades approach half a billion pounds annually, so if, as our figures suggest, the percent of spend on machines which is attributable to problem gamblers is in excess of 10%, then problem gamblers are contributing in the region of £50m a year to profits from that one form of gambling alone.

Some forms of gambling are more popular than others and some more costly than others. To obtain a complete picture of the contribution that different forms of gambling in Britain make to all takings from problem gamblers, it would therefore be necessary to take into account two further parameters: the relative popularity of different forms of gambling in the population; and the average amounts spent by the public on different forms. A rough calculation can be made if it can be assumed that BGPS10 reports of monthly spend by those gambling at least once a month provide a reasonably good indication of the relative amounts of money spent by all gamblers. Weighting the best estimates of percentage spend attributable to problem gamblers, shown in Table 3, by frequency of engagement and by average monthly spend produces a division of the 15 forms of gambling into two groups. Six forms of gambling are each likely to be contributing between 10% and 20% of the total spend on British gambling which represents losses made by problem gamblers: betting on horse races (a popular, high spend form of gambling), playing table games in a casino (less popular but high losses), FOBTs (high losses, especially by problem gamblers), betting on sports events (quite popular, quite high losses), betting on dog races (losses especially high for problem gamblers), and slot machines (quite popular, moderately high losses by problem gamblers). The remaining nine forms of gambling each appear to contribute between 1% (other lotteries) and 4% (football pools) to the total of all problem gamblers’ losses.

There are, of course, a number of limitations of the present data and analysis. First, all the estimates made must be considered gross approximations due to the nature of the data collected. They rely on self-report responses given to questions about frequency of engagement, and amount spent per month, on different forms of gambling. Questions about spend are particularly problematic, requiring as they do an assumption that the respondent has understood that by ‘spend’ is meant stakes minus winnings, and then the making of a rough calculation of net spend (Blaszczynski et al., 1997; Wardle et al., 2007). There is evidence that many people, asked to calculate how much a fictitious player has ‘spent’ gambling, use a turnover rather than a net expenditure strategy, with the result that the estimate of spend is higher (Blaszczynski et al., 2006). The same is true when people report on their own gambling spend, but this factor which acts to inflate estimates of spend may be offset to some extent, when, as in the present study, people are asked to summarise spending over a period of a month, in which case there is a tendency to under-report spend compared to that reported in a daily diary (Blaszczynski et al., 2008). In addition to these uncertainties about answers to questions about spend, estimates are likely to be very sensitive to the answers about frequency and spend provided by relatively small numbers of problem gamblers. The absence of spend data for those engaging in a form of gambling less than once a month was a further limitation. Here, average spend figures for less frequent gamblers had to be imputed on the basis of the pattern of spend data for the more regular gamblers. An additional limitation was the need to rely, for a measure of the commitment of time to gambling, on estimates of ‘days play’ rather than a possibly more sensitive measure of actual time spent (e.g. hours of play).

Despite these limitations, the authors believe the present results are important as a first ever estimate of gambling occasions and losses attributable to problem gamblers in Britain. In the BGPS10, summary questions about gambling frequency and spend over a year or a month were assumed to produce answers which had validity in sorting respondents roughly into those with lesser or greater time and financial involvement in gambling. It was not expected that such questions would produce highly accurate estimates (Wardle et al., 2011). Although there must therefore be uncertainty about the accuracy of the precise estimates produced, it is probable that the general picture of the results is valid in two important respects: firstly, the demonstration that percentage days and spend attributable to problem gambling far exceed the basic prevalence figures previously reported, and secondly, the relatively much higher percentages for certain forms of gambling compared to others. The variation in estimates of attributable days and spend produced by the different methods used here (DSM scale versus PGSI; estimates A versus B of attributable spend) serve as some indication of the sensitivity of the results to different methods of calculation.

Particularly in the case of percentage attributable spend, we have been cautious in our estimates which for a number of reasons are likely to be underestimates. It is likely that most people underestimate their gambling losses (Griffiths, 1994) and it is possible that this bias may particularly be the case for problem gamblers. It was surprising to discover, for all forms of gambling, a negative gradient for spend per day by days gambling per month which seems to indicate a relatively strong trend (stronger for some forms of gambling than others), for those who gambled more often to gamble less per gambling day. Although there may be good reasons for this, we are inclined to believe that this is partly an artefact due to a greater underestimate of losses on the part of the most frequent gamblers. If that assumption is correct, then the second estimates of attributable spend (estimates B) are likely to be underestimates for that reason.

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Notes for Tables 1-4

1. Includes bingo played at a club or online (the prevalence of playing bingo online was less than 1%)
2. Includes bets made online, by telephone, or in person, with a bookmaker or a betting exchange.
3. Includes casino games (such as roulette, poker, blackjack) played in a casino or online (prevalence rates of playing casino games online in the last year was 3% overall).

Ns are unweighted numbers

Table 1. Prevalence of DSM problem gambling (PG) and percentage of days gambling and gambling spend attributable to DSM PGs, by type of gambling

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of gambling** | **% prevalence of DSM PG** | **% days play attributable to DSM PGs** | **% spend attributable to DSM PGs Estimate A**  **% prevalence adjusted for greater spend by PGs** | **% spend attributable to DSM PGs Estimate B**  **% days adjusted for spread of spend over days play** |
| National Lottery (N=4636) | 1.3 | 1.97 | 1.78 | 1.65 |
| Another lottery (N=1987) | 1.3 | 3.12 | 1.73 | 1.71 |
| Scratch cards (N=1882) | 2.5 | 8.10 | 11.25 | 4.56 |
| Football pools (N=315) | 7.5 | 9.78 | 4.43 | 8.51 |
| Bingoa (N=697) | 2.9 | 3.88 | 2.55 | 3.57 |
| Slot machines (N=943) | 4.0 | 16.15 | 18.30 | 9.00 |
| FOBTs (N=290) | 8.8 | 24.70 | 27.28 | 21.60 |
| Horse racesb (N=1234) | 2.9 | 14.10 | 9.16 | 7.42 |
| Dog racesb (N=318) | 7.1 | 24.53 | 40.75 | 16.31 |
| Sports bettingb (N=594) | 4.4 | 15.47 | 11.34 | 9.25 |
| Betting on non-sporting eventsb (N=309) | 7.8 | 15.93 | 13.42 | 10.46 |
| Casino gamesc (N=366) | 6.8 | 32.90 | 10.47 | 11.40 |
| Poker (N=136) | 12.8 | 24.24 | 10.29 | 19.24 |
| Online slot machine style games (N=198) | 9.1 | 20.05 | 11.19 | 13.03 |
| Private betting (N=816) | 3.1 | 15.03 | 5.89 | 4.80 |
|  |  |  |  |  |

Table 2. Prevalence of PGSI problem gambling (PG) and percentage of days gambling and gambling spend attributable to PGSI PGs, by type of gambling

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of gambling | % prevalence of PGSI PG | % days play attributable to PGSI PGs | % spend attributable to PGSI PGs Estimate A  % prevalence adjusted for greater spend by PGs | % spend attributable to PGSI PGs Estimate B  % days adjusted for spread of spend over days play |
| National Lottery (N=4636) | 0.92 | 1.49 | 1.39 | 1.21 |
| Another lottery (N=1987) | 1.18 | 2.41 | 1.50 | 1.43 |
| Scratch cards (N=1882) | 1.74 | 5.45 | 7.20 | 3.29 |
| Football pools (N=315) | 4.36 | 5.83 | 3.44 | 5.24 |
| Bingoa (N=697) | 2.06 | 5.86 | 6.55 | 3.91 |
| Slot machines (N=943) | 3.43 | 11.82 | 13.65 | 6.93 |
| FOBTs (N=290) | 9.31 | 26.62 | 20.85 | 21.93 |
| Horse racesb (N=1234) | 2.23 | 9.50 | 6.31 | 5.25 |
| Dog racesb (N=318) | 6.09 | 19.86 | 36.36 | 15.45 |
| Sports bettingb (N=594) | 4.75 | 14.10 | 10.55 | 9.67 |
| Betting on non-sporting eventsb (N=309) | 7.12 | 12.19 | 13.29 | 8.72 |
| Casino gamesc (N=366) | 5.57 | 29.52 | 12.76 | 9.48 |
| Poker (N=136) | 5.81 | 11.81 | 5.69 | 9.34 |
| Online slot machine style games (N=198) | 7.31 | 14.06 | 11.11 | 10.36 |
| Private betting (N=816) | 3.38 | 10.07 | 4.66 | 4.89 |
|  |  |  |  |  |

Table 3. Best estimates of percentage of days gambling and of gambling spend attributable to problem gamblers, by type of gambling

|  |  |  |
| --- | --- | --- |
| Type of gambling | % days play attributable to PGs (average of 2 estimates) | % spend attributable to PGs (average of 4 estimates) |
| National Lottery (N=4636) | 1.73 | 1.51 |
| Another lottery (N=1987) | 2.77 | 1.59 |
| Scratch cards (N=1882) | 6.78 | 6.58 |
| Football pools (N=315) | 7.81 | 5.41 |
| Bingoa (N=697) | 4.87 | 4.15 |
| Slot machines (N=943) | 13.99 | 11.97 |
| FOBTs (N=290) | 25.66 | 22.92 |
| Horse racesb (N=1234) | 11.80 | 7.04 |
| Dog racesb (N=318) | 22.20 | 27.22 |
| Sports bettingb (N=594) | 14.79 | 10.20 |
| Betting on non-sporting eventsb (N=309) | 14.06 | 11.47 |
| Casino gamesc (N=366) | 31.21 | 11.03 |
| Poker (N=136) | 18.03 | 11.14 |
| Online slot machine style games (N=198) | 17.06 | 11.42 |
| Private betting (N=816) | 12.55 | 5.06 |
|  |  |  |
|  |  |  |

Table 4. Prevalence of PGSI problem & moderate risk gambling (PG & MR) and percentage of days gambling and gambling spend attributable to PGSI PGs & MRs, by type of gambling

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type of gambling | % prevalence of PGSI PG& MR | % days play attributable to PGSI PGs & MRs | % spend attributable to PGSI PGs & MRs  Estimate A  % prevalence adjusted for greater spend by PGSI PGs & MRs | % spend attributable to PGSI PGs & MRs  Estimate B  % days adjusted for spread of spend over days play |
| National Lottery (N=4636) | 3.30 | 12.88 | 5.35 | 11.92 |
| Another lottery (N=1987) | 3.86 | 6.36 | 6.37 | 4.50 |
| Scratch cards (N=1882) | 5.86 | 14.53 | 15.76 | 9.51 |
| Football pools (N=315) | 12.79 | 15.96 | 18.29 | 14.78 |
| Bingoa (N=697) | 6.05 | 10.66 | 9.80 | 8.53 |
| Slot machines (N=943) | 10.08 | 27.17 | 34.07 | 17.31 |
| FOBTs (N=290) | 23.12 | 38.80 | 43.00 | 34.79 |
| Horse racesb (N=1234) | 6.28 | 22.46 | 17.52 | 12.88 |
| Dog racesb (N=318) | 14.78 | 38.99 | 55.72 | 25.23 |
| Sports bettingb (N=594) | 12.76 | 26.55 | 25.78 | 20.34 |
| Betting on non-sporting eventsb (N=309) | 17.03 | 23.48 | 34.91 | 20.06 |
| Casino gamesc (N=366) | 15.98 | 42.29 | 24.29 | 21.42 |
| Poker (N=136) | 20.00 | 30.33 | 11.00 | 25.62 |
| Online slot machine style games (N=198) | 21.00 | 29.82 | 30.45 | 23.31 |
| Private betting (N=816) | 9.01 | 19.80 | 13.06 | 12.06 |
|  |  |  |  |  |