Problem gambling and suicidal thoughts, suicide attempts and non-suicidal self-harm in England: evidence from the Adult Psychiatric Morbidity Survey 2007

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Disclosures

The research questions for this project were developed and set by the Responsible Gambling Strategy Board (independent advisors to the Gambling Commission) and the project commissioned by GambleAware, via a competitive tender process.

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Executive Summary

Background

Concern has been raised about a possible relationship between problem gambling and suicidality, but relatively few studies have examined this. To strengthen the evidence base, Gamble Aware commissioned a project with two objectives. Firstly, to establish whether problem gambling and suicidality are associated. And secondly, to review what data exist or could be collected in order to investigate any association in more depth. This report addresses the project's first objective. A subsequent report will address the second objective.

Methods

The 2007 Adult Psychiatric Morbidity Survey (APMS) is England's only general population survey with measures of both suicidality and problem gambling (while the APMS is conducted every seven years; the 2014 survey did not include problem gambling as a topic). Descriptive and regression analyses addressed the following research questions:

- Are problem gamblers more likely than the rest of the population to have suicidal thoughts or to make a suicide attempt?
- If so, do they remain more likely after other aspects of their lives - like worse mental health and socioeconomic insecurity - are taken into account?
- What proportion of people who experienced suicidal thoughts/attempts in the past year were problem gamblers?

Results

One in five problem gamblers had thought about suicide (19.2%) and one in twenty (4.7%) had made a suicide attempt in the past year. These rates are far higher than those for at-risk gamblers (4.9% and 1.2%) and those with no signs of problem gambling (4.1% and 0.6%).

Problem gamblers were more likely than the rest of the population to be male, younger, single, living in rented accommodation, and have few qualifications. They had higher rates of impairment, poor mental health and substance dependence, and exposure to a range of stressful experiences, including debt and homelessness.

Problem gamblers' odds of having suicidal thoughts/attempts in the past year were halved once these other factors were taken into account, but they remained significantly higher than the rest of the population.

Among people who had made a suicide attempt in the past year, about one in twenty were problem gamblers (5.2%) and another one in twenty were at-risk gamblers (4.9%). These rates were higher than for those who had not attempted suicide in the past year (0.5% and 2.5% respectively).

Limitations

The survey was conducted over a decade ago and the sample was relatively small, with just 172 people identified as at risk of problem gambling and 41 identified as problem gamblers. Both problem gambling and past-year suicide attempts/thoughts are relatively rare, and the analyses were underpowered. The survey is cross-sectional in design and the data cannot be used to establish temporal sequencing in problem gambling and suicidality, nor causality.

Conclusions

These analyses are the first based on English general population data to address whether problem gamblers are more likely than the rest of the population to experience suicidal thoughts and have made a suicide attempt in the past year. Problem gamblers are also shown to be more likely to experience a wide range of other adverse circumstances. However, even after accounting for this, the association between problem gambling and suicidal thoughts/attempts remains strong. While it is not possible to conclude from these analyses that problem gambling causes suicidality and self-harm, the results do show that problem gamblers are a vulnerable group warranting targeted support who are more likely than others to have suicidal thoughts and to harm themselves.

Next steps

The associations described in this report provide an overview, drawing on a wide range of risk factors and using simple analytical techniques. A further forthcoming report examines the same dataset but focusing in on the role of social and community-related factors, in particular the potential mediatory role that loneliness may play in associations between problem gambling and suicidality. Further reports are investigating other options for extending the evidence base, drawing on findings from an expert workshop.

1. Introduction

Aims and objectives

Suicide is the leading cause of death among young people in the UK. Suicide prevention is a key priority for the UK government, with a policy aim to reduce the number of suicides by 10% in 2020/21 (Mackley, 2018). Research has identified a number of groups with elevated rates of suicide, including people with experience of previous self-harm, those seeking help from primary and secondary care providers and people with preceding diagnosable, but not necessarily diagnosed, mental health conditions (Mackley, 2018).

There is also an increasing body of evidence which, alongside reports from affected families and surviving individuals, suggests a strong association between problem gambling and suicide. To date, much of the research evidence has been drawn from problem gamblers who have sought treatment for their gambling, with numerous studies across different jurisdictions showing elevated rates of suicidal thoughts and suicide attempts among this group (Ronzitti et al, 2018; Sharman et al 2019; Ledgerwood & Petry, 2004; Hodgins et al, 2006; Guillou-Landreat et al, 2016). Some studies have suggested that in many cases these relationships can be explained by either co-existing or pre-existing conditions (Ledgerwood & Petry, 2004; Hodgins et al, 2006) though others have suggested that there is a more nuanced relationship between gambling and suicide (Moghaddham et al, 2015).

Internationally, studies of suicides have also found an association. In Victoria, Australia a review of coroner's records suggested that gambling was evident in around 10 suicides a year (about 2% of all suicides in that jurisdiction) (Coroner's Prevention Unit, 2013). In Hong Kong, a study of 150 suicides linked gambling with 11% of them (Wong et al, 2010) and the English and Welsh 2017 National Confidential Inquiry into Suicide and Homicide (Appleby et al, 2018) found that of those aged 20-24 who had died from suicide, 4% had a gambling problem.

Existing research has shared a number of challenges. These include definitional limitations, small sample sizes, and little scope for a temporal relationship between problem gambling and suicidality to be examined. One clear implication of the existing data available has been that they do not allow causal conclusions to be confirmed. These are limitations which also apply to the current analyses. As with many public health and social science research questions, demonstration of a causal link between experience of problem gambling and subsequent suicide is complex, takes time and is difficult to establish definitively.

It is clear, however, that problem gambling can have a range of adverse consequences, resulting in financial distress and debt, relationship breakdown and social isolation and detriments to physical and mental health and wellbeing (Wardle et al, 2018). Given this, it is important to examine (in so far as data allow) the association between problem gambling and suicidality, especially as increasing our knowledge of potential pathways to suicide is essential for effective prevention. Using nationally representative data, collected in 2007, this report aims to explore:

a) The association between problem gambling and the experience of suicidal thoughts, suicide attempts and non-suicidal self-harm among adults living in England
b) If and how these associations are affected by different socio-demographic, economic and health characteristics of individuals.

This will produce the first national estimates for England of the extent of suicidal thoughts and attempts among problem gamblers living in the community and of the extent of problem gambling among those who have experienced thoughts of suicide or attempted suicide in the past year.

Structure of report

This report starts by giving an overview of the data used and the analytical methods (Section 2). Results are presented in Section 3. This presents details on both the broad profile of problem gamblers and of those who had thoughts of suicide in the past year and those who had attempted suicide in the past year. Tables for this section are shown in Appendices A and B. Multivariate models are then presented to explore the strength of the association between problem gambling and suicidal thoughts/attempts once other factors are taken into account. Tables for this section are embedded within the main text. Finally, conclusions are presented in Section 4.

Wider project

This report is one output from a wider project commissioned by Gamble Aware. This output focuses specifically on a descriptive overview of the associations between problem gambling and suicidality using the 2007 Adult Psychiatric Morbidity Survey (APMS). However, it is recognised that these data were collected more than a decade ago and much has changed; including the nature of gambling (Wardle et al, 2019) and the prevalence of self-harm (McManus et al, 2019). The wider project includes other outputs which address other aims. These include a separate report examining the range of potential data sources either currently available or which could be collected on this topic and investigation into what further research is needed to build a better evidence base on this issue. This draws on findings from an expert workshop. A further analysis report is also in production, extending the analyses presented here to examine specific potential mediators of the association between problem gambling and suicidality, such as loneliness.

Broader research agenda

This project on the associations between problem gambling and suicidality forms part of a still wider programme of research into the full range of potential gambling-related harms. This public health agenda recognises suicidality as one, albeit severe, form of harm that may be associated with problem gambling. Alongside exploring the association between problem gambling and suicidality, the analyses presented here consider a wide range of other

potential social, economic and health-related harms. This report can therefore also be seen as contributing to this wider research agenda.

2. Methods

Overview

This report presents secondary analysis of a Department of Health and Social Care (DHSC) survey: the Adult Psychiatric Morbidity Survey (APMS) 2007 (McManus et al., 2009). The survey included a series of questions about problem gambling and self-harming thoughts and behaviours.

APMS 2007 is a high-quality probability sample survey of the adult household population from age 16, with no upper age limit to participation. While many surveys include a short screen for non-specific psychological distress, APMS has rigorous and detailed assessments of a range of specific mental disorders. As a population survey it covers both diagnosed and undiagnosed conditions, and questions on treatment and service use allow unmet need to be examined. Interviews have been conducted every seven years since 1993, with around 7,500 people in their own homes. As well as standard questions about social, economic and health-related circumstances, information is gathered on experience of adversities in childhood and adulthood. Suicidal thoughts, suicide attempts and non-suicidal self-harm (NSSH) were asked about first face to face, and again in the laptop self-completion part of the interview for greater perceived privacy (Tourangeau et al., 2000). The data forms a key part of national self-harm monitoring. Gambling behaviour was asked about in the 2007 survey.

As a cross-sectional survey, the dataset can be used to examine prevalence and patterns of association, but not causality.

Data collection

A stratified random probability sampling design was used. This involved multiple stages: sampling Primary Sampling Units (PSUs); addresses within selected PSUs; and households and individuals within selected addresses (ONS, 2014). This approach was designed to produce a sample representative of the wider population living in private households, with biases in sample selection addressed through weighting. People living in communal or institutional establishments (such as large residential care homes and offender institutions), in temporary housing (such as hostels or bed and breakfasts) or sleeping rough, were not within the scope of the survey. While rates of self-harming behaviours may be elevated in these populations (Jenkins et al. 2005), they are estimated to comprise less than 2% of the total population and their exclusion should not impact on the overall rate (ONS, 2015).

Interviewers visited addresses to identify private households with at least one resident. One adult was selected at random using the Kish grid method (Kish, 1965). Fieldwork took place

in October 2006 to December 2007. Response was 57%. There were 7403 participants aged 16 and over. Weights were developed in four stages to take account of selection probabilities and non-response. Interviews averaged 1.5 hours. Most of the questionnaire was administered face-to-face using computer assisted interviewing. Some information was collected by self-completion, with participants keying their responses into a laptop. Full details of sampling, procedure, quality control and ethical review are published elsewhere (McManus et al., 2009).

Measures

Problem gambling

The problem gambling screen used on APMS 2007 was based on the DSM-IV criteria and administered during the laptop self-completion. Initial questions established whether any money had been spent on gambling in the past year. No questions were asked about gambling prior to the past year. Examples of gambling activities were provided and included:

- Buying lottery tickets or scratch cards for yourself
- Playing games or making bets for money on the internet (online gambling)
- Playing football pools, bingo or fruit machines
- Playing games or making bets with friends for money
- Betting on races and/or with a bookmaker
- Table games in a casino.

Participants responding 'yes' were routed to the problem gambling screen. Those responding 'no' were asked a check question about whether they had gambled just occasionally in the past year, perhaps to buy a lottery ticket or scratch card. An additional 6% of respondents were identified as past year gamblers using this method and were also routed to the problem gambling screen.

The ten-item problem gambling screen was used to identify past year gamblers who were experiencing problems with their gambling behaviour at the time of the interview. APMS 2007 had a modified version of the DSM-IV-Multiple Response screen used in British Gambling Prevalence Survey (BGPS) 2007 (Wardle et al. 2007). The problem gambling questions on APMS were asked of those who had gambled in the past 12 months. However, they were phrased in the present tense and likely reflect the prevalence of current symptoms rather than symptoms present in the past year.

The number of DSM-IV criteria endorsed were summed to generate a score. Participants are assigned a score if they had given a yes or no response to least half of the items (4% of respondents were excluded). Those who had not gambled in the past year were given a score of zero.

DSM-IV recommends that people screen positive for pathological gambling if they meet five or more of the diagnostic criteria. The number of participants meeting this threshold was too low for robust analyses. However, the British Gambling Prevalence Survey 1999,

drawing on the work of Sue Fisher, recommended that a score of three or more be used to indicate 'problem gambling' and this threshold is now routinely used in all estimates of problem gambling prevalence in Britain.[1] Other researchers have also recommended using a score of one or two to include those 'at risk' of problem gambling.

Suicidal thoughts, suicide attempts and non-suicidal self-harm (NSSH): The 5th Diagnostic and Statistical Manual of Mental Disorders includes non-suicidal self-injury (NSSI) and suicidal behaviour disorder as conditions for further study (Plener and Fegert 2015). While intentionality can be difficult to establish (Kapur et al. 2013), an attempt to separate suicide attempts from non-suicidal self-harm (NSSH) has also been the approach adopted on APMS. The term 'suicidal thoughts' used in this analysis has a narrow and precise definition – it includes only those participants who specifically reported thinking about taking their own life. The suicidal thoughts indicator was not derived from reporting feelings about 'life not being worth living' or 'wishing to be dead' (which were also asked in the questionnaire). APMS participants were asked in the face to face section of the interview the following questions about suicidal thoughts, suicide attempts, and self-harm without suicidal intent:

- **Have you ever thought of taking your life, even though you would not actually do it?**
- **Have you ever made an attempt to take your life, by taking an overdose of tablets or in some other way?**
- **Have you ever deliberately harmed yourself in any way but not with the intention of killing yourself?**

A positive response to each was followed up with a question on whether this last occurred in the past week, the past year, or longer ago. The questions about lifetime experience were also asked in the self-completion interview, and variables have been derived which combine reports at either point. Participants reporting NSSH were asked about **methods** of self-harm (cutting, burning, swallowing something, or some other way). Participants were not asked why they felt that they had suicidal thoughts or had made a suicide attempt. It should also be noted that suicide is very rare and difficult to predict: very few people who report suicidal thoughts or a suicide attempt go on to take their own life.

The questionnaire was reviewed, and factors identified based on known and potential risk factors for problem gambling and suicidality. Factors were selected to ensure some coverage of the following domains: demographics, economic circumstances, mental health, health and health behaviours, adversities and life events, and social and area-level context.

Demographics such as **age, sex, defacto marital status and ethnic group** were established using standardised measures. For these analyses, age was banded into three groups: 16-24, 25-54, and 55 and over. Ethnic group was classified as White, Black/Black British, Asian/Asian British, Mixed/multiple/other, although the sample was underpowered to

[1] See Stinchfield, R. 2014 for a review of this.

examine this in detail. Marital status was coded as those who were married, cohabiting, single, separated, widowed or divorced.

Economic circumstances were captured with a range of derived variables, including **tenure** (whether household members are owner-occupiers, renting from a social landlord, or renting from a private landlord) and **economic status** (employed, unemployed and looking for work, economically inactive). The latter category includes students, those unable to work due to health or disability, people looking after children, and the retired, so long as they were not in any paid employment. A further indicator identified people who had been in arrears with payments in the past year, referred to in the tables as being in **debt/disconnected**. The derived variable draws on having had gas, electricity or other fuel disconnected in the past year because the participant could not afford to pay, and/or being 'seriously behind in paying within the time allowed' for any of rent, gas, electricity, water, goods bought on hire purchase, mortgage repayments, council tax, credit card payments, mail order payments, telephone, other loans, TV license, road tax, social fund loan, and child support or maintenance.

Mental health: Symptoms of **common mental disorder** (CMD) were assessed using the Clinical Interview Schedule – Revised (CIS-R). The CIS-R is an interviewer administered structured interview schedule covering the presence of non-psychotic symptoms, including depression and anxiety, in the week prior to interview. Its outputs include a continuous scale that reflects the overall severity of CMD psychopathology (Lewis et al. 1992).

Possible cases of current **Post-traumatic stress disorder** (PTSD) were identified with the Trauma Screening Questionnaire (TSQ) (Brewin et al. 2002). This covers the re-experiencing and arousal features of PTSD, but not criteria related to avoidance and numbing. Respondents were first asked whether they had experienced a traumatic event at some time in their life after the age of 16. If so, they rated ten PTSD items in relation to the past 2 weeks. Endorsement of six or more of these was taken to indicate a positive screen for PTSD (Jonas et al., 2014).

Alcohol dependence in relation to the last 12 months was derived from responses to the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al. 1993). A score of 16-19 indicates harmful use or mild dependence, while a score of 20+ identifies probable dependence. Questions about drug use were located in the self-completion part of the interview. Participants who in the past year had used cannabis, amphetamines, crack, cocaine, ecstasy, tranquillisers, opiates or volatile substances were asked five questions designed to assess **drug dependence** for each drug type reported based on the Diagnostic Interview Schedule (Malgady et al. 1992). These questions covered level of use, sense of dependence, inability to abstain, increased tolerance and withdrawal symptoms. Endorsement of any these items in the past year was used to indicate signs of possible drug dependence. For the models, responses to these questions were combined into a single variable representing any drug or alcohol dependence.

We identified adult **attention-deficit/hyperactivity disorder** (ADHD) with the Adult ADHD Self-Report Scale (ASRS) screen (Kessler et al. 2005, Kessler et al. 2007). The screen consists of six questions assessing the ADHD characteristics of inattention, hyperactivity and impulsivity in the six months prior to interview. This was administered face-to-face to all respondents. Respondents were asked to rate the frequency of these characteristics using a five-point scale. A four-item threshold is recommended for indicating the need for a clinical assessment for ADHD (Fayyad et al. 2007).

Borderline intellectual functioning (BIF) was defined as a verbal IQ between one and two standard deviations below the mean (70–85) on the National Adult Reading Test (NART) (Nelson et al., 1991).

The procedure for identifying cases of **psychosis** involved two phases: in the first, respondents were screened for psychosis using the Psychosis Screening Questionnaire (PSQ) (Bebbington & Nayani, 1995) together with other criteria indicative of a psychotic episode (such as use of antipsychotic medication, receipt of a diagnosis and a stay in a psychiatric ward or hospital). Screen positive individuals were invited for a phase-two assessment and interviewed with the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) (World Health Organization, 1992) conducted by clinically trained research interviewers from the University of Leicester. In the analyses proposed here, we will use a measure of *probable psychosis*. This category included SCAN positive cases, together with participants who were not interviewed with SCAN, but who met at least two of the phase-one psychosis screening criteria.

The process for screening for **autism spectrum disorders** is described in full elsewhere (Brugha et al. 2014). A 20-item version of the full Autism Quotient (AQ) was used to capture signs of ASD in adult participants (Baron-Cohen et al. 2001). While the survey also included a fuller and more reliable assessment of autism, too few positive cases were identified for robust analysis. It should be noted that most participants with a high AQ screening score would not be identified with an autism spectrum condition if assessed fully.

Health and health behaviours Participants self-rated their '**health in general'** as either excellent, very good, good, fair, or poor. Disability was established by asking about whether assistance was required to perform each of a series of basic and instrumental **Activities of Daily Living** (Mlinac & Feng, 2014). In addition to alcohol and drug use and dependence, questions were asked about **Smoking**, enabling classification of participants into whether or not they were regular smokers around the time of the interview.

Adversities and life events Questions on experiences in childhood and adulthood were asked. Types of adversities covered included homelessness, job loss, poverty, poor housing conditions, bullying, domestic violence and sexual abuse. These draw on the List of Threatening Experiences (LTE) scale (Brugha & Cragg, 1990).

Social and area level context Different aspects of the social, neighbourhood and regional context of participants were captured. Loneliness and social isolation was assessed using an

item from the Social Functioning Questionnaire (SFQ) (Tyrer et al., 2005). Trust in others and a sense of belonging and satisfaction with the local neighbourhood were each assessed with single item social capital measures. Area level deprivation was measured using Index of Multiple Deprivation scores, with a focus on the proportion living in the most deprived quintile. Region was captured using former Government Office Regions.

Analysis approach

Analyses used weighted data and took account of complex survey design and non-response, so that the results are representative of the household population aged 16 and over at the time the survey was conducted. Descriptive and correlational analyses were carried out using SPSS v21, with p-values and confidence intervals calculated at the 95% level (IBM, 2012). The results of the descriptive analyses are presented for all selected factors, irrespective of whether they reached statistical significance.

Stata v14 was used for the multiple variable logistic regression analyses (StataCorp, 2013). Because many different social, economic and health-related factors are associated both with problem gambling and with suicidality, it was necessary to conduct regression analyses that allowed the influence of other factors in an association to be controlled for. Regression analyses were conducted in stages, firstly generating unadjusted odds ratios (OR), and then ORs for models progressively adjusting for additional blocks of factors. The selection of factors to retain in the final regression models drew on fit statistics and interpretability. Missing data was minimal and was excluded from analyses. For all models, Average Marginal Effects (AMEs) were calculated. Average Marginal Effects (AMEs) are predicted values from non-linear multivariate analysis (i.e., from multiple logistic regression). They can be interpreted in a similar way to odds ratios from multiple logistic regression, though do not always necessarily give the same results as odds ratios.[2] AMEs take all variables entered into the model into account to derive the predicted proportion of a given behaviour (i.e., problem gambling) for each variable. Like odds ratios, AMEs are presented relative to a reference category (i.e., non-problem gamblers) and show how much (if at all) the predicted prevalence varies from the reference group. This can then be converted to show what the predicted prevalence of problem gambling is for each group, taking into account all other variables in the model. These have been presented alongside the odds ratios as they help readers to better understand and interpret the results of multivariate models. The sample included just 41 participants with a DSM-IV score of 3 or more, and thus was underpowered for subgroup variations in the characteristics of this group to be examined.

Report and table conventions

The data used in this report have been weighted, while all base sizes are presented unweighted. Associations noted in the main body of this report are significant at

[2] It is not uncommon for AMEs to give slightly different results to odd ratios from logistic regressions. In these circumstances, the general recommendation is to focus on results from the regression models.

conventional levels ($p<0.05$) unless otherwise noted. The p-value for all analyses are shown in the tables in Appendix A and B. The term 'significant' refers to statistical significance (at the 95% level) and is not intended to denote substantive importance.

Ethical Review

An application covering these analyses was approved by the London School of Hygiene and Tropical Medicine's Ethics Committee (ref: 15960).

3. Results

3.1 Profile of problem and at-risk gamblers

In 2007, 0.7% of adults were classified as problem gamblers (a DSM score of 3 or more), 41 participants in the survey sample. A further 2.5% (172 participants) were classified as at-risk gamblers (a DSM score of 1 or 2) and 96.8% (6728 participants) were either non gamblers or gamblers who did not report experiencing any of the DSM symptoms presented (a DSM score of 0). In the sections that follow we look at the profile of problem and at-risk gamblers by a wide range of characteristics and circumstances, including their experience of suicidal thoughts, suicide attempts and non-suicidal self-harm, compared with the rest of the population (Appendix A, Table 1).

Demographics and socio-economic status

Problem gamblers and at-risk gamblers were more likely than the rest of the population to be: male, younger (under 35 years); single; living in rented accommodation and were less likely to have higher levels of educational qualifications (Table 1, Figures 1-3). It should be noted that while these characteristics were more common in problem gamblers, and to a lesser extent in at-risk gamblers, there were problem gamblers in the sample who were female, older, had higher qualifications, a spouse or lived in their own homes.

Figure 1: Sex, by DSM-IV gambling score

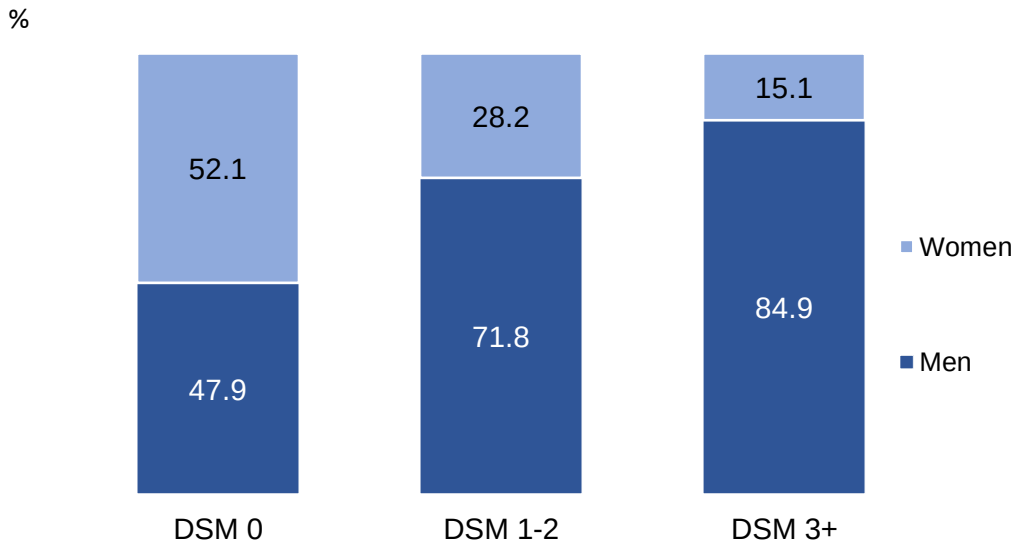


Figure 2: Age group, by DSM-IV gambling score

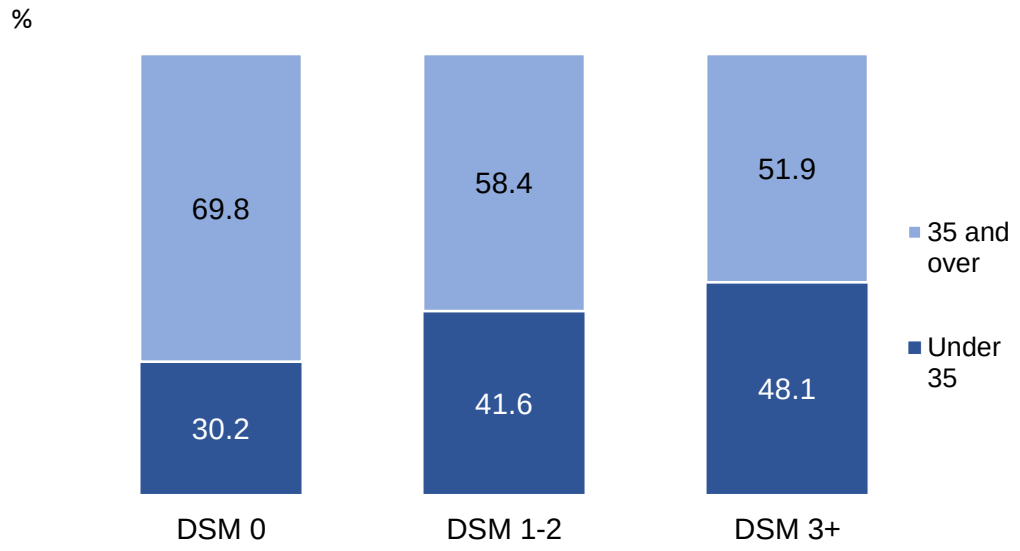
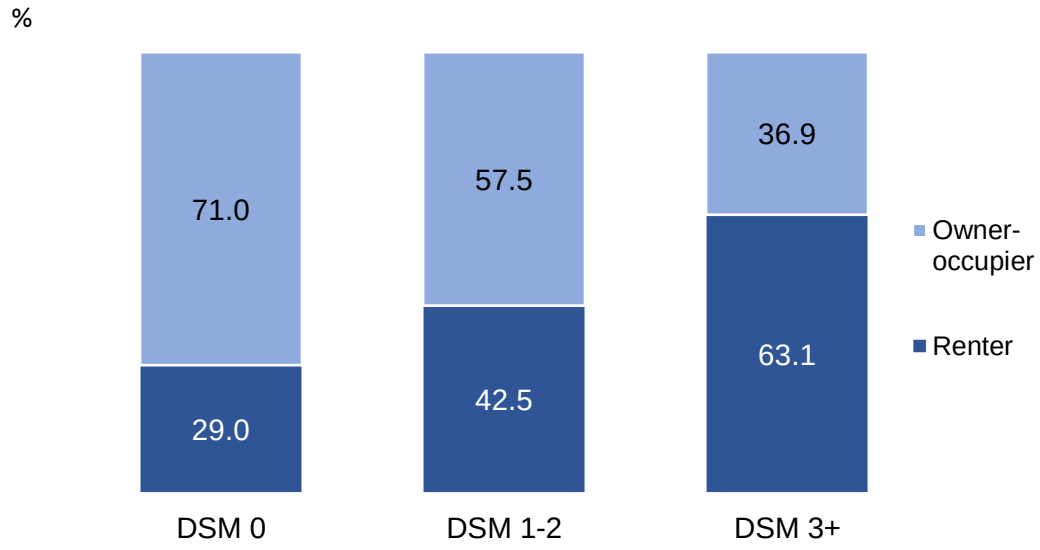


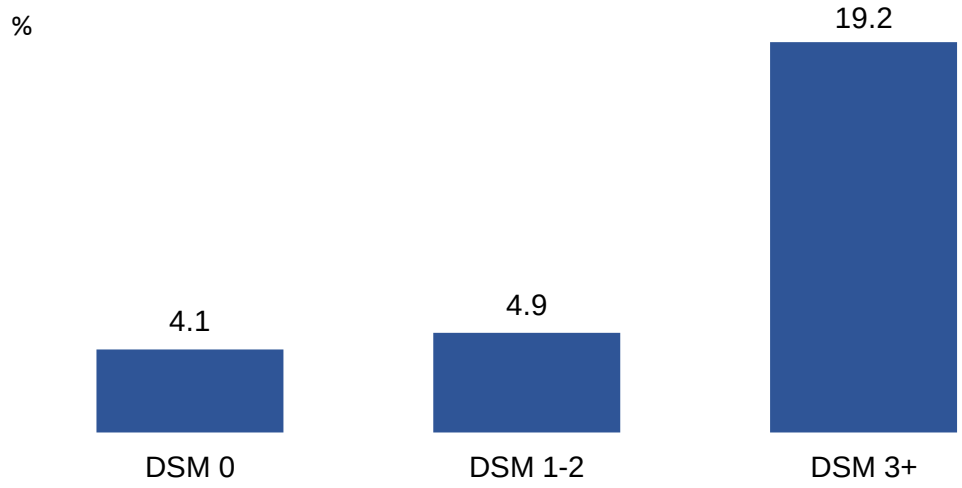
Figure 3: Tenure, by DSM-IV gambling score



Suicidal thoughts, suicide attempts and non-suicidal self-harm

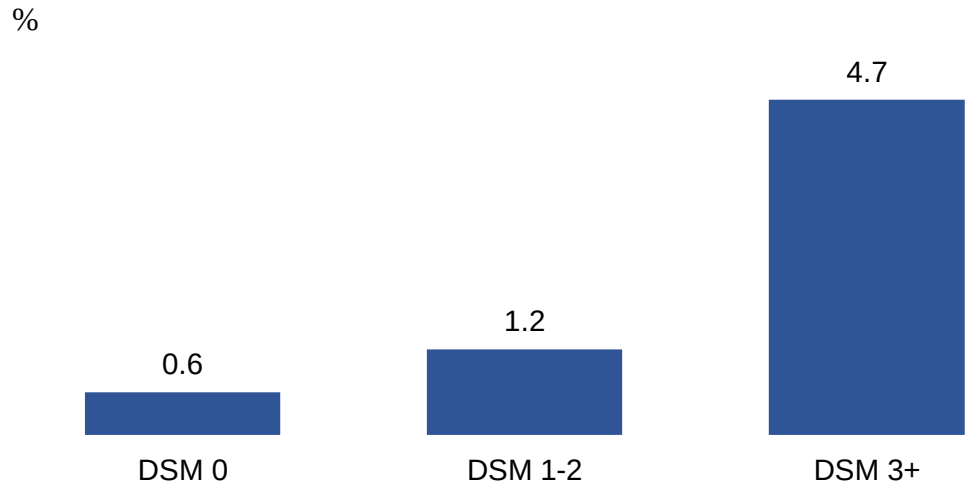
Problem gamblers had elevated rates of suicidal thoughts, attempts and non-suicidal self-harm. In the past year, 20.9% of problem gamblers had felt that life was not worth living, 17.1% had wished they were dead and 19.2% had thought about suicide. Equivalent estimates among those with a DSM score of 0 were 6.0%, 4.7% and 4.1%. While rates of suicidal thoughts, attempts and self-harm were clearly elevated among problem gamblers, the profile for at-risk gamblers was very similar to that for the rest of the population (Table 2, Figure 4).

Figure 4: Suicidal thoughts in the past year, by DSM-IV gambling score



In the past year 4.7% of problem gamblers reported attempting suicide compared with 0.6% of those with a DSM score of 0 and 1.2% among at-risk gamblers (Figure 5). Over a fifth of problem gamblers (22.4%) have self-harmed without suicidal intent at some point in their life, compared with one in twenty (5.2%) in the population as a whole.

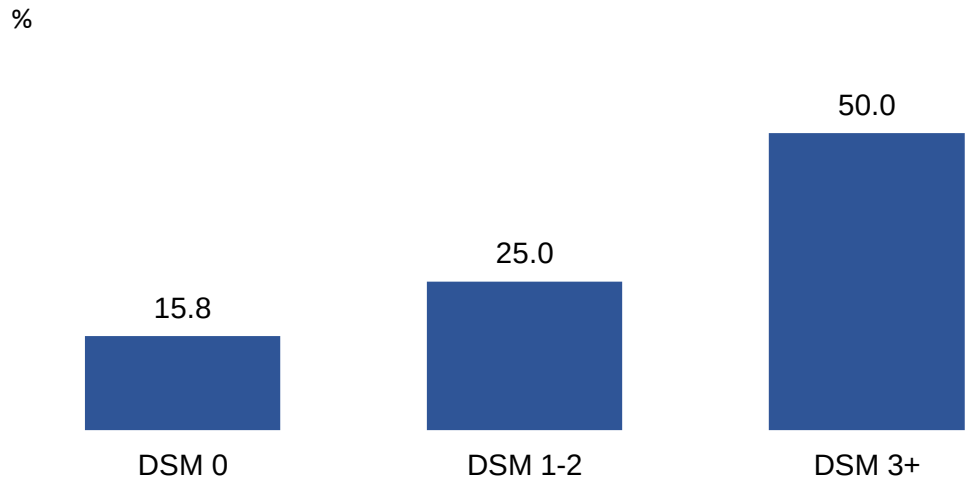
Figure 5: Suicide attempt in the past year, by DSM-IV gambling score



General health, disability and impairment

Lower self-reported general health status appeared to be more common in problem gamblers, although this did not reach statistical significance. There was, however, a clear association between DSM-IV gambling score and having difficulties with multiple activities of daily living (an indicator of disability), as well as an association with predicted verbal IQ. Half of problem gamblers had a verbal IQ score of 85 or less, compared with 15.8 of those with a DSM score of 0 (Table 3, Figure 6). The association between verbal IQ and problem gambling has been explored previously by Rai and colleagues (Rai et al., 2014).

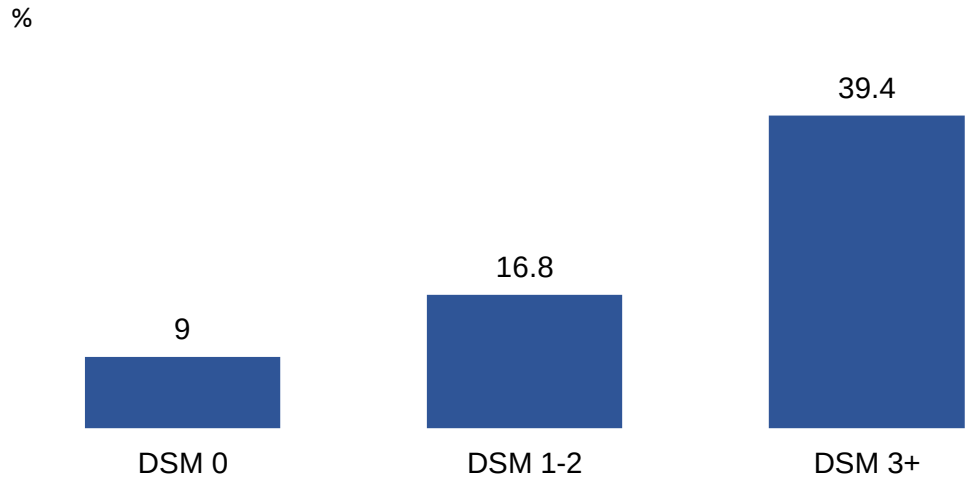
Figure 6: Verbal IQ score of 85 or less, by DSM-IV gambling score



Symptoms of common mental disorder

Problem gamblers were more likely than the rest of the population to experience a range of different anxiety and depression related symptoms. Most experienced fatigue (60.4%), half reported sleep problems (50.7%) and four in ten reported irritability (41.8%). Problem gamblers were four times more likely (39.4%) than those with a DSM score of 0 (9.0%) to have problems with concentration and forgetfulness (Table 4, Figure 7). Both depressive symptoms (like fatigue and low mood) and anxiety symptoms (like worry and panic) were strongly associated with DSM-IV gambling score.

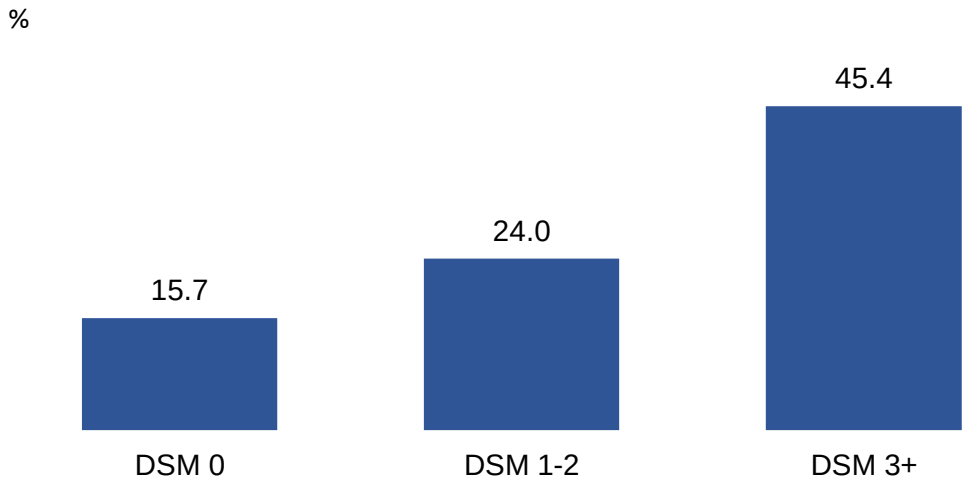
Figure 7: Problems with concentration and forgetfulness, by DSM-IV gambling score



Depression and anxiety disorders

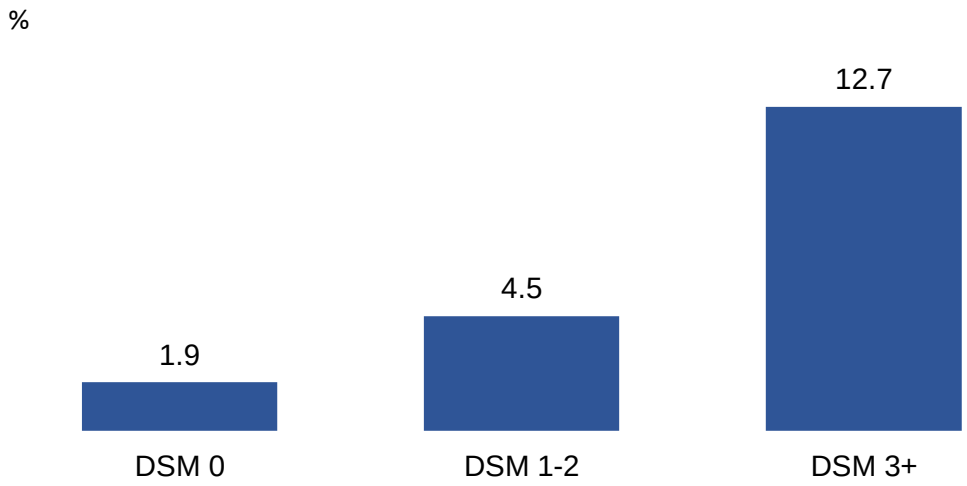
Nearly half of problem gamblers had at least one type of depression or anxiety disorder (also known as a common mental disorder) around the time of the interview (45.2%), three times the rate in those with a DSM score of 0 (15.7%) (Table 5, Figure 8).

Figure 8: Depression or anxiety disorder, by DSM-IV gambling score



Associations with DSM-IV gambling score were especially pronounced for anxiety disorders, which include generalised anxiety disorder, panic disorder, and obsessive-compulsive disorder. Rates of phobias, a serious and highly impairing anxiety disorder, were six times more common in problem gamblers (12.7%) than in those with a DSM score of 0 (1.9%) (Figure 9).

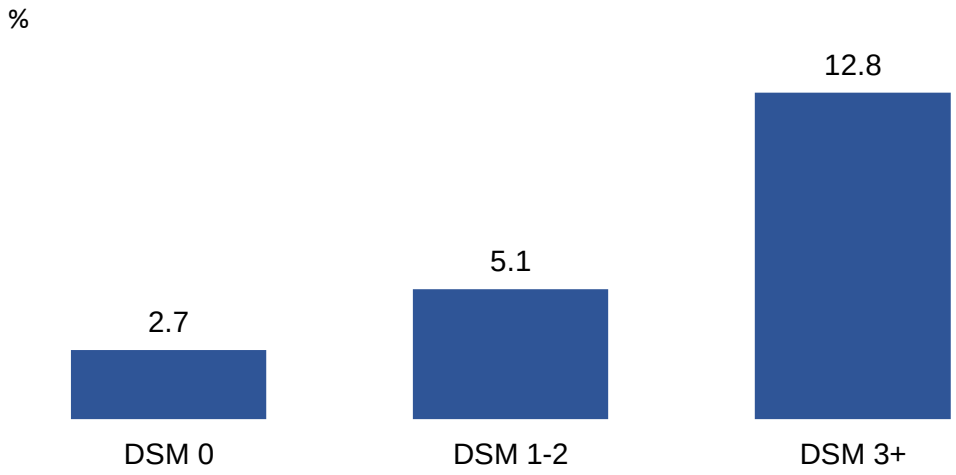
Figure 9: Phobias, by DSM-IV gambling score



Other mental disorders

Post-traumatic stress disorder (PTSD) was about four times more common in problem gamblers (12.8%) than in those with a DSM score of 0 (2.7%) (Table 5, Figure 9). While many of the symptoms associated with PTSD overlap with other anxiety and depressive disorders, it does suggest more exposure to traumatic events in this population, or less resilience or resource for coping and recovery. Traumatic events are usually defined in this context as unexpected events where you fear that you, or someone close to you, may die.

Figure 9: Posttraumatic stress disorder (PTSD), by DSM-IV gambling score



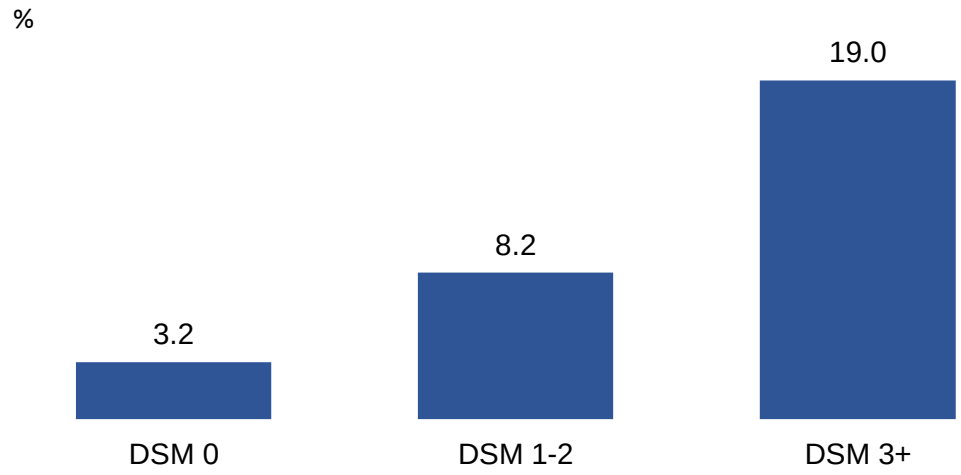
Attention-deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterised by inattentiveness, hyperactivity and impulsiveness. One in four problem gamblers (25.8%) and approaching one in five at-risk gamblers (17.7%) screened positive for the disorder, compared with 7.8% of the rest of the population. These screen positive rates do not mean that the disorder is necessarily present in those people, but do indicate the presence of multiple ADHD traits. This association was highlighted previously by Jacob and colleagues (Jacob et al., 2018).

Autistic traits were screened for, and also showed an association with DSM-IV gambling score. Problem gamblers were about four time more likely (37.5%) than those with a DSM score of 0 (9.2%) to be identified with traits linked to autism spectrum conditions.

Substance dependence and tobacco consumption

Substance use and dependence were strongly associated with DSM-IV gambling score. One in five problem gamblers (19.0%) had at least one sign of dependence on an illicit drug, compared with 8.2% of at-risk gamblers and 3.2% of those with a DSM score of 0 (Table 5, Figure 10). Rates of harmful or hazardous use of alcohol (49.1% vs 21.3%) and regular smoking (37.6% vs 21.3%) were also elevated in problem gamblers compared with those with a DSM score of 0.

Figure 10: Signs of drug dependence, by DSM-IV gambling score



Experience of stressful life events

Experience of a range of different types of stressful or traumatic life events across the life course were associated with DSM-IV gambling score. Problem gamblers were three times more likely (6.1%) than those with a DSM score of 0 (1.8%) to have been expelled from school as child or have run away from home (15.0% vs 4.6%, p=0.055). 19.1% of problem gamblers had experienced sexual or physical abuse in childhood, compared with 11.3% of those with a DSM score of 0.

Problem and at-risk gamblers were also more likely than the rest of the population to be facing a range of adversities in adulthood. These included sexual abuse or violence from a partner (Table 6, Figure 11) and exposure to violence at work (Table 6, Figure 12).

Figure 11: Violence from a partner or sexual abuse, by DSM-IV gambling score

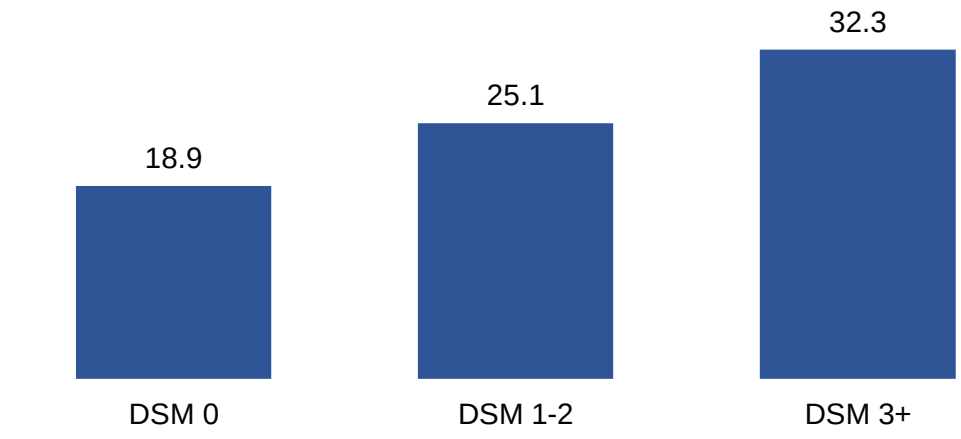
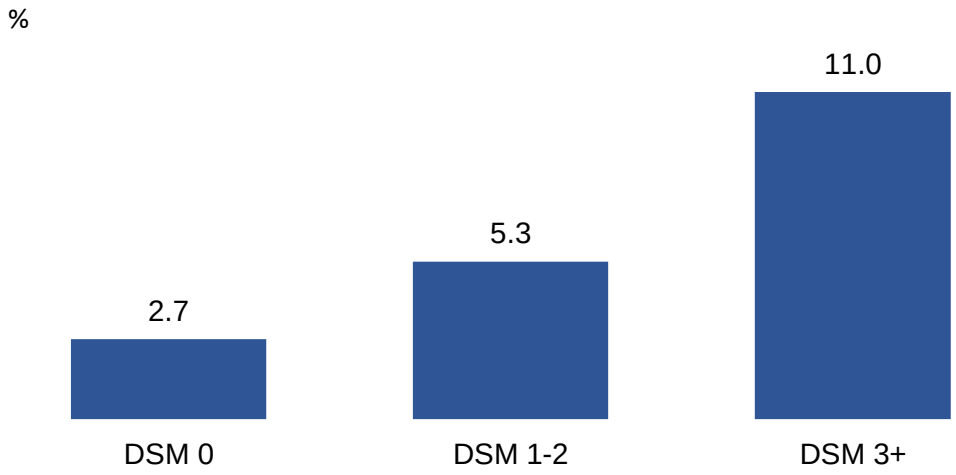


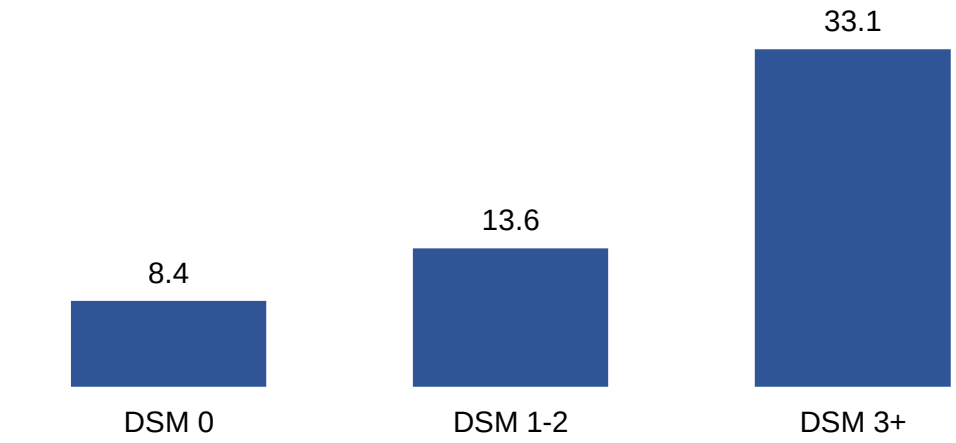
Figure 12: Violence at work, by DSM-IV gambling score



Financial difficulties

Problem gamblers were more likely to experience a range of financial difficulties than those with a DSM score of 0, including having ever been homeless (16.2% vs 3.5%); and in the past year having used less fuel than needed because of concerns about costs (33.9% vs 14.0%) and being in debt or disconnected (33.1% vs 8.4%) (Table 6, Figure 13).

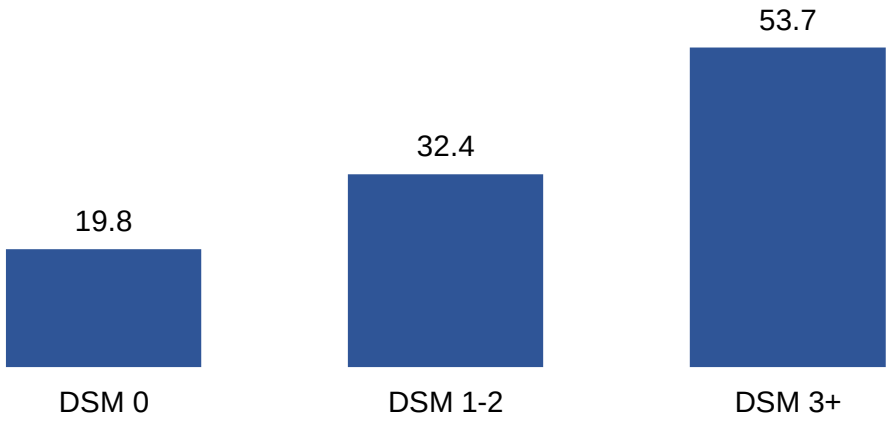
Figure 13: In debt arrears or disconnected in past year, by DSM-IV gambling score



Local area

Half of problem gamblers (53.7%) and a third of at-risk gamblers (32.4%) reported feeling socially isolated from others (Table 7, Figure 14). They were less likely to trust other people in the neighbourhood or to feel that they belonged, and more likely to want to move from the area they lived in than those with a DSM score of 0. Problem, though not at-risk gamblers, were more likely to live in the most deprived areas in England.

Figure 14: Feel socially isolated, by DSM-IV gambling score



3.2 Profile of those experiencing suicidal thoughts and suicide attempts

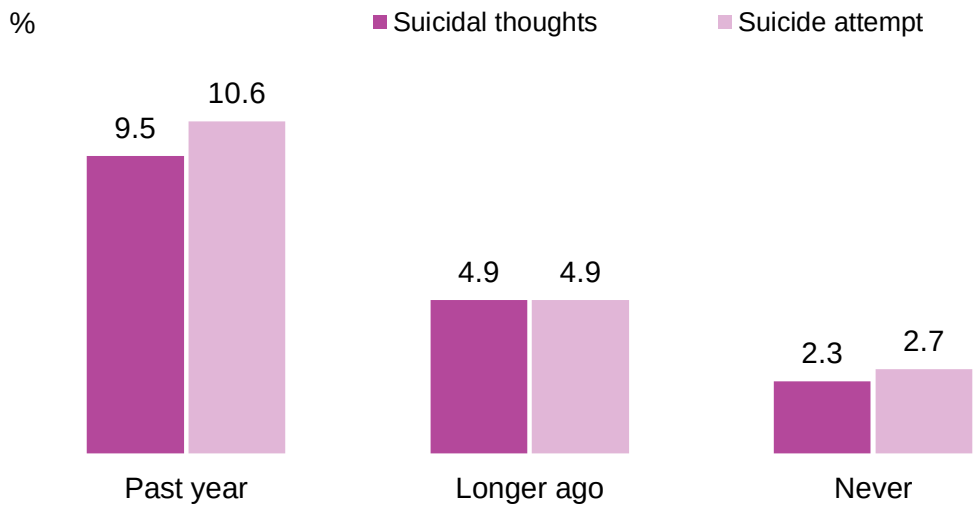
Overall, 13.7% of adults had ever had suicidal thoughts, with 4.3% experiencing this within the past year (339 participants). 4.8% of adults had attempted suicide, with 0.7% of adults having done so in the past year (52 participants). Finally, 5.2% of adults had ever experienced non-suicidal self-harm (questions did not look at experience of non-suicidal self-harm in the past year) (314 participants).

In the sections that follow, we explore the profile of those who had experienced suicidal thoughts or attempts in the past year. This includes looking at the prevalence of problem gambling among those who had experienced suicidal thoughts or attempts in the past year.

Demographic and socio-economic status

People who reported suicidal thoughts and having made a suicide attempt in past year were more likely than the rest of the population to be female, single, and living in rented accommodation. They were about four times more likely to be unemployed than those who had never had suicidal thoughts or made a suicide attempt (Appendix B, Tables 9 and 10, Figure 15). Being younger and not South Asian was also associated with suicidal thoughts, while lacking formal qualifications was associated with making a suicide attempt.

Figure 15: Unemployed, by when last experienced suicidal thoughts or a suicide attempt



Problem and at-risk gambling: scores and individual DSM items

Those who had experienced suicidal thoughts in the past year were more likely to be problem gamblers than those who had never had suicidal thoughts (3.2% vs 0.5%). Overall, 6.1% of those who had suicidal thoughts in the past year were either at-risk or problem gamblers. This was most marked among men: 9.8% of men and 3.8% of women who had thought about suicide in the past year were problem or at-risk gamblers.

Those who had attempted suicide in the past year were also more likely to be problem gamblers or at-risk than those who had not (5.2% vs 0.5% for problem gambling; 4.9% vs 2.5% for at-risk). Overall, one in ten people who had attempted suicide in the past year were categorised as either an at-risk or problem gambler (10.1%) (Tables 12 and 13, Figure 16).

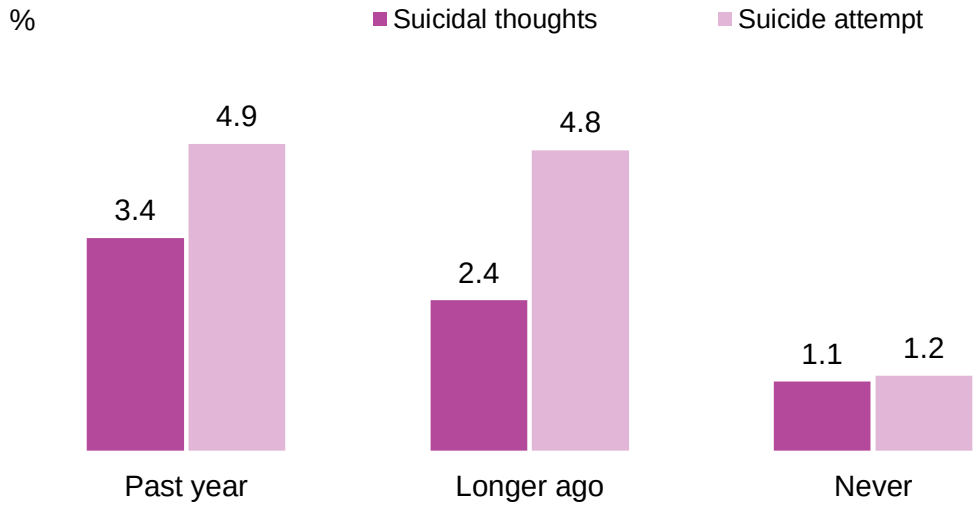
Figure 16: Problem gambling (DSM-IV 3+), by when last experienced suicidal thoughts or a suicide attempt

Some of the individual DSM-IV items were more strongly associated with suicidal thoughts and attempts than others. Items with a clear association with having had suicidal thoughts in the past year included having made unsuccessful attempts to stop gambling (3.0% vs 1.1%); gambling to escape problems (2.8% vs 0.6%), chasing losses (3.4% vs 1.1%) and lying to family, friends and other about gambling (1.3% vs 0.3%) (Figures 17-18).

Figure 17: Made unsuccessful attempts to stop gambling, by when last experienced suicidal thoughts or a suicide attempt

Because of small base sizes, it was not possible to look at responses to all DSM-IV items among those who had attempted suicide in the past year. But where observations permit, we see that those who had attempted suicide in the past year were more likely to have made unsuccessful attempts to stop gambling (5.2% vs 1.1%). They were also more likely to gamble to escape problems (1.3% vs 0.7%) and chase losses (4.9% vs 1.2%) (Figure 17-18).

Figure 18: After losing money return another day to get even, by when last experienced suicidal thoughts or a suicide attempt



General health, disability and impairment

Both suicidal thoughts and suicidal attempts were associated with poorer self-reported health, greater difficulties with Activities of Daily Living and lower verbal IQ scores. For example, 43% of those who had suicidal thoughts in the past year experienced at least two difficulties with daily living. Equivalent estimates among those who had never experienced suicidal thoughts were 16% (Table 15, Figure 19). The links between lower verbal IQ and suicidal thoughts and self-harm behaviours has been highlighted previously (McManus et al. 2018).

Figure 19: Need assistance with two or more activities of daily living, by when last experienced suicidal thoughts or a suicide attempt

Common mental disorders and other mental disorders

Rates of common mental disorders were about six times higher in those with past year experience of suicidal thoughts or attempt than in those who had never experienced these (Tables 17 and 18, Figure 20).

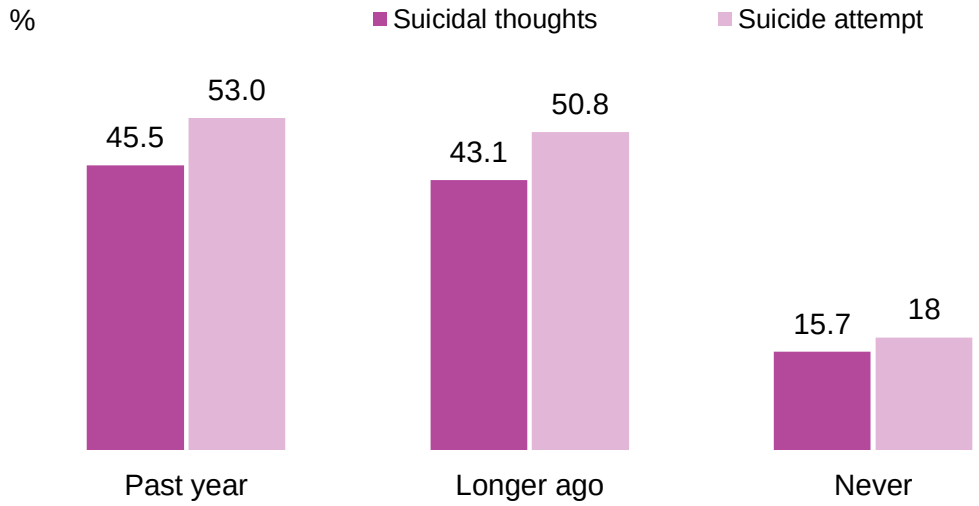
Figure 20: Any common mental disorder (anxiety or depressive disorder), by when last experienced suicidal thoughts or a suicide attempt

Similar patterns were also evident for other types of mental disorder, including for post-traumatic stress disorder (PTSD), serious mental illnesses like psychosis, and neurodevelopmental disorders like attention-deficit/hyperactivity disorder (ADHD) and for autistic traits.

Substance dependence and tobacco consumption

Substance use and dependence were strongly associated with suicidal thoughts and dependence. Half (53.2%) of people who had made a suicide attempt and a third of those who had suicidal thoughts in the past year had hazardous or harmful patterns of alcohol use, compared with 22.0% of the population as a whole (Tables 17 and 18, Figure 21). Signs of dependence on illicit drugs and rates of regular smoking were also elevated in those with experience of suicidal thoughts or an attempt.

Figure 21: Signs of drug dependence, by when last experienced suicidal thoughts or a suicide attempt

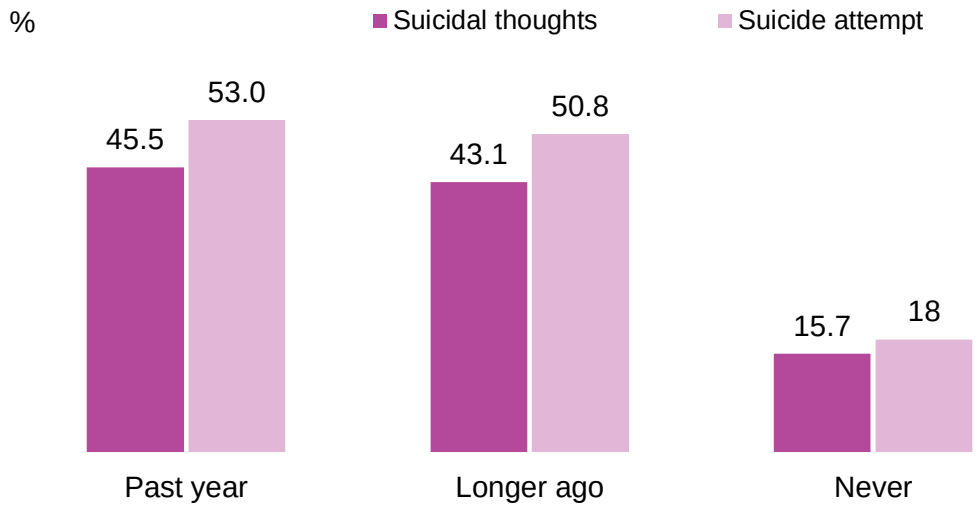


Experience of stressful life events

There were strong associations between suicidal thoughts or having made a suicide attempt in the past year and experience of a range of different adverse life events across the life course. These included being more likely to have experienced sexual or physical abuse as a child, being expelled from school or running away from home, and having been taken into local authority care.

Those with experience of suicidal thoughts or a suicide attempt in the past year were also more likely than the rest of the population to have faced adversities in adulthood. These included sexual abuse or violence from a partner and exposure to violence at work (Table 19, Figure 22).

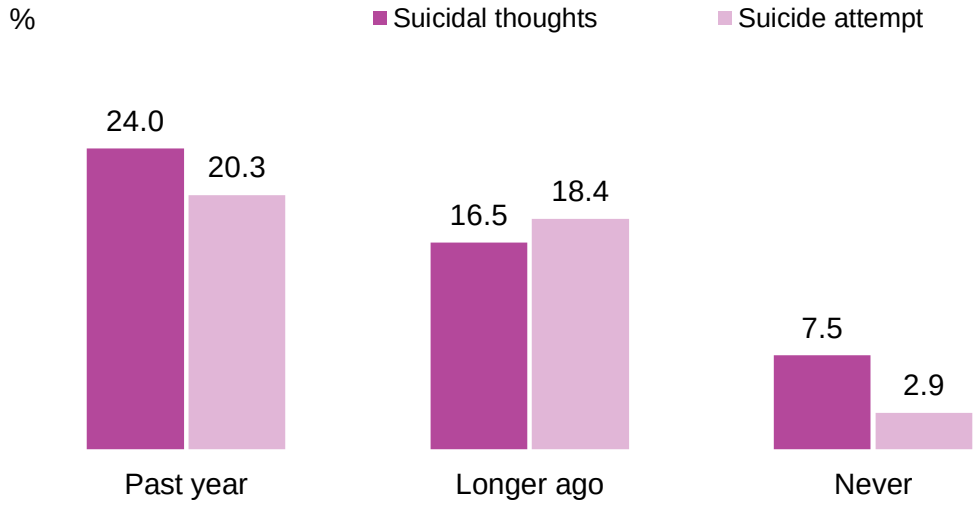
Figure 22: Violence from a partner or sexual abuse, by when last experienced suicidal thoughts or a suicide attempt



Financial difficulties

Those experiencing suicidal thoughts or who had attempted suicide in the past year were more likely to experience a range of financial difficulties, including currently living in poor housing, debt in the past year, or had ever experienced homelessness or major financial crisis (Table 19, Figure 23).

Figure 23: In serious debt arrears or disconnected in the past year, by when last experienced suicidal thoughts or a suicide attempt



Local area

Feeling socially isolated was more common among those experiencing suicidal thoughts (73.0%) or attempting suicide (78.2%) than those who had never experienced these things (15.3% among those who had never had suicidal thoughts; 20.4% among those who had never attempted suicide). Those who had attempted suicide or had suicidal thoughts in the

past year were also more likely to live in the most deprived areas of England (33.6% suicidal thoughts; 36.8% for those attempting suicide) than those who had never experienced these things (19.0% for those who had never had suicidal thoughts; 19.3% for those who had never attempted suicide).

3.3 Factors associated with problem gambling and suicidal thoughts/attempts in the past year

As can be seen from the sections above, a whole range of different factors are associated both with problem gambling and the experience of suicidal thoughts or attempts in the past year. Previous research has suggested that the relationship between problem gambling and suicidal thoughts or attempts is mediated or otherwise partially accounted for by other common experiences, such as co-existing (or pre-existing) substance abuse or mental health problems (Ledgerwood & Petry, 2004; Hodgins et al, 2006). In this section, we present findings from multivariate logistic regressions which enables us to control for the potential presence of these other conditions and of other common experiences which may influence this relationship.

The first model presented looks at the factors associated with having either suicidal thoughts or attempting suicide in the past year.[3] The confidence intervals (CI) around each estimate are provided in Tables 1 and 2. It should be noted that these CIs are often quite wide, indicating a lack of precision in the estimates. This is likely to be largely due to the relatively small sample sizes. Figure 23 shows the different range of factors entered into the models. These were chosen to represent the different domains considered in the bi-variate analysis, representing the most significant findings (for example, socio-demographic status, economic circumstances, local area etc) and also includes problem gambling status.

To explore the range of potential mediating influences and help us better understand which factors most influence the association between problem gambling and suicidal thoughts six different models were run. These six models were run in stages and added another block of variables to explore the impact of adding further controls upon the association between problem gambling and suicidal thoughts/attempts in the past year (see Figure 23).

[3] Because of small base sizes we have combined anyone who experienced suicidal thoughts or attempts in the past year into one category in these models. Only 1 person out the 52 reporting a suicide attempt in the past year did not also report having suicidal thoughts.

Figure 23: Model development for factors associated with suicidal thoughts/attempts in the past year

Model 1	Domains: Problem gambling status and socio-demographic status	Variables: Problem gambling status, age, sex and marital status
Model 2	Domains: Problem gambling, socio-demographic status, economic status and local area	Variables: Model 1 + educational status, employment status, area deprivation and debt
Model 3	Domains: Problem gambling, socio-demographic status, economic status, local area and general health	Variables: Model 2 + general health status
Model 4	Domains: Problem gambling, socio-demographic status, economic status, local area, general health and substance dependence	Variables: Model 3 + substance dependence
Model 5	Domains: Problem gambling, socio-demographic status, economic status, local area, general health and mental health status	Variables: Model 3 + mental health
Model 6	Domains: Problem gambling, socio-demographic status, economic status, local area, general health, substance dependence & mental health status	Variables: Model 5 + substance dependence

As Table 1 shows, problem gambling was significantly associated with suicidal thoughts/ attempts in the past year. Looking at Model 1 first (which controls for socio-demographic status only), the odds of having suicidal thoughts or attempting suicide in the past year were 5.9 times higher among problem gamblers than non-problem gamblers, with the predicted prevalence of suicidal thoughts/attempts among this group being 19.8% (95% CI 5.6% - 34%). However, as Table 1 also shows, when other factors are taken into account the association starts to attenuate. In Model 4 (which takes into account socio-demographic status, economic status, local area, general health and substance dependence) the strength of the association between problem gambling status and suicidal thoughts/attempts decreased, though the odds of having suicidal thoughts/attempts were still higher among problem gamblers than non-problem gamblers. In Model 4, the predicted prevalence of suicidal thoughts/attempts among problem gamblers was 11.5% (95% CI 2.3% - 20.7%) compared with 4.0% for non-problem gamblers. The final model (Model 6) takes into account mental health status and substance dependence as well general health, socio-demographic and economic status. Here the odds of having suicidal thoughts or attempting suicide in the past year remained higher among problem gamblers (being 3.0 times higher than non-problem gamblers) and the predicted prevalence of suicidal thoughts/attempts among problem gamblers was 9.1% (95% CI 2.9% - 15.2%) compared with 4.0% for non-problem gamblers.

Table 1: Factors associated with suicidal thoughts/attempts in the past year

	Odds Ratio	Confidence interval: lower	Confidence interval: higher	Predicted prevalence (from Average Marginal Effects)	Confidence interval: lower	Confidence interval: higher
				%	%	%
Model 1						
Non-problem gambler (p<0.01)	1			4.3		
Problem gambler	5.9	2.2	15.4	19.8	5.6	34.0
Model 2						
Non-problem gambler (p<0.01)	1			4.0		
Problem gambler	5.7	2.2	14.8	17.3	5.3	29.3
Model 3						
Non-problem gambler (p<0.01)	1			4.0		
Problem gambler	4.9	1.8	13.5	14.8	3.7	25.9
Model 4						
Non-problem gambler (p<0.05)	1			4.0		
Problem gambler	3.6	1.26	10.27	11.5	2.3	20.7
Model 5						
Non-problem gambler (p<0.05)	1			4.0		
Problem gambler	3.6	1.3	0.0	10.3	3.3	17.2
Model 6						
Non-problem gambler (p<0.05)	1			4.0		
Problem gambler	3.0	1.1	8.4	9.1	2.9	15.2

The second set of models looked at factors associated with being a problem gambler. Because problem gambling is a relatively rare event (we have 41 problem gamblers in this dataset) models have to be constructed with care and general guidance is to limit the number of explanatory variables entered into the model. For this reason, a smaller number of factors were included in this analysis, though the same process as before was followed, where variables of greatest significance and representing a range of domains were chosen for inclusion, see Figure 24.

Figure 24: Model development for factors associated with being a problem gambler

Model 1	Domains: Suicidal thoughts/attempts and socio-demographic status	Variables: Whether had suicidal thoughts/attempts in past year, age and sex
Model 2	Domains: Suicidal thoughts/attempts, socio-demographic status, economic status and local area	Variables: Model 1 + educational status, employment status, area deprivation and debt
Model 3	Domains: Suicidal thoughts/attempts, socio-demographic status, economic status, local area and substance dependence	Variables: Model 2 + substance dependence
Model 4	Domains: Suicidal thoughts/attempts, socio-demographic status, economic status, local area, general health and mental health status	Variables: Model 2 + mental health status
Model 5	Domains: Suicidal thoughts/attempts, socio-demographic status, economic status, local area, substance dependence and mental health status	Variables: Model 4 + substance dependence

Table 2 shows a significant association between suicidal thoughts/attempts and problem gambling status that attenuates as more factors are taken into account. Looking at Model 1, the odds of being a problem gambler were higher among those who had suicidal thoughts/attempts in the past year, with the predicted prevalence of being a problem gambler being 3.3% among this group (95% CI 0.6%-5.9%). By Model 5, which also takes into account socio-economic status, local area, substance abuse and mental health status, the strength of the association has attenuated and is at the margins of statistical significance (p=0.054). The odds of being a problem gambler were 2.9 times higher among those with suicidal thoughts/attempts in the past year than those who did not experience these things. The predicted prevalence is 1.7% (95% CI: 0.0%-3.4%) among this group compared with 0.6% for those who did not have suicidal thoughts/attempts in the past year.

Table 2: Factors associated problem gambling						
	Odds Ratio	Confidence interval: lower	Confidence interval: higher	Predicted prevalence (from average marginal effects)	Confidence interval: lower	Confidence interval: higher
				%	%	%
Model 1						
No suicidal thoughts/attempts in past year (p<0.01)	1			0.6		
Suicidal thoughts/attempts in past year	5.9	2.3	15.1	3.3	0.6	5.9
Model 2						
No suicidal thoughts/attempts in past year (p<0.01)	1			0.6		
Suicidal thoughts/attempts in past year	5.4	1.9	15.1	3.0	0.3	5.6
Model 3						
No suicidal thoughts/attempts in past year (p<0.05)	1			0.6		
Suicidal thoughts/attempts in past year	4.1	1.4	12.0	2.3	0.1	4.5
Model 4						
No suicidal thoughts/attempts in past year (p<0.05)	1			0.6		
Suicidal thoughts/attempts in past year	3.5	1.2	10.3	2.0	0.0	4.0
Model 5						
No suicidal thoughts/attempts in past year (p<0.054)	1			0.6		
Suicidal thoughts/attempts in past year	2.9	1.0	8.5	1.7	0.0	3.4

4. Conclusions

This report outlines, for the first time, the association between problem gambling and suicidal thoughts, attempts and non-suicidal self-harm among adults living in England. It shows that problem gamblers were more likely than non-problem gamblers to either have had suicidal thoughts in the past year (19.2% vs 4.1%) or to have attempted suicide (4.7% vs 0.6%). This association persisted even after other factors, such as mental health status or substance dependence were taken into account, although the strength of the relationship attenuated. It also shows that around 5% of those who had attempted suicide in the past year were problem gamblers and a further 5% were at-risk gamblers. Base sizes did not

permit us to look at this further though the odds of being a problem gambler were generally higher among those who had experienced suicidal thoughts/attempts in the past year.

The academic literature has tended to suggest that the relationship between suicidal thoughts or suicide attempts is mediated by co-existing, or pre-existing, mental health difficulties (see for example, Ledgerwood & Petry, 2004; Hodgins et al, 2006). Our results show that controlling for common mental disorders (as measured by the CIS-R, which includes six types of depression and anxiety disorders) and for substance misuse does reduce the strength of the association between suicidal thoughts/attempts and problem gambling. The odds of having suicidal thoughts/attempts in the past year among problem gamblers reduced by about half once these factors were taken into account. That said, the odds of having suicidal thoughts/attempts in the past year were still higher among problem gamblers than non-problem gamblers and these factors did not explain the full relationship. This suggests the need to explore the broader range of pathways and mechanisms that underpin this relationship. This may, for example, include more consideration of people's life circumstances and social support but should also consider that, for some, the harms that people experience from problem gambling may lead them to think about taking their own life.

Too little is known about these differing pathways and analysis of survey data, like that presented in this report, can only give a partial picture. Despite being a large-scale survey, we are looking at relatively rare events both in terms of problem gambling and suicide attempts, meaning there is a limit to the analysis you can do. For example, in the APMS sample there were two problem gamblers who had made a suicide attempt in the year prior to interview, and eight who had thoughts of suicide in the past year. We purposively limited our analysis to suicidal thoughts/attempts in the past year as we wanted to explore how these behaviours were related to gambling problems within a concurrent timeframe. A limitation of much of the previous academic literature has been attempting to look at the relationship between current gambling problems and any experience of suicidal thoughts or attempts across the life-course. This, however, limits the level of complex analysis that can be undertaken, especially where you attempt to take other confounding behaviours or experiences into account. For some analyses there simply are not enough cases to do the analysis as reliably as we may like, and the analysis is underpowered (as seen with our models predicting the odds being a problem gambler). We also note that our data is now some 12 years out of date. Since 2007, rates of suicidal thoughts, especially among men (McManus et al. 2016), have increased and the landscape in which gambling is now offered and promoted in Britain has changed radically. Whilst this report represents the first nationally representative exploration of the association between problem gambling and suicidal thoughts, attempts and self-harm, there is an urgent need for more up to date insight.

That said, our results support existing evidence. Two out of the three treatment clinics funded by GambleAware in Britain have recently presented data about suicidal thoughts or

attempts among their clients, with both showing very high rates of suicidal ideation among these groups (Sharman et al, 2019; Ronzitti et al, 2018). Analysis of data from the NHS National Problem Gambling Clinic in London also showed a relationship between problem gambling severity and suicidal thoughts that persisted even after substance abuse and anxiety and depression were taken into account (Ronzitti et al, 2018). These data, combined with our results, suggest that problem gamblers should be viewed as a group vulnerable to the experience of suicidal thoughts or attempts, regardless of its antecedents. This is regardless of whether they are seeking treatment or not. Any health care or other service provider or community or user group likely to be in contact with this group should be aware of this risk and should have appropriate policies and safeguarding procedures in place. This, crucially, includes the gambling industry, whose customer service and land-based staff are at the frontline of dealing with this vulnerable group and need to be aware of the increased risk of suicidality among the people they deal with.

This report is the first in a series of outputs from this project: one further report examines the role of loneliness and another sets out recommendations for improving the evidence base in this area.

Appendix A: Profile of problem gamblers: bivariate analyses

All tables in this report present weighted analyses and unweighted bases.

Table 1. Sample profile: current demographic and socioeconomic profile by DSM score (0, 1-2, 3+)

		DSM score 0		DSM score 1-2		DSM score 3+		Total		
		n	%	n	%	n	%	n	%	
Total:		*6728*	96.8	*172*	2.5	*41*	0.7	7403	100	
Characteristics:										**P value***
Sex	Men	*2878*	47.9	*111*	71.8	*32*	84.9	*3021*	48.6	<0.001
	Women	*3850*	52.1	*61*	28.2	*9*	15.1	*3920*	51.4	
Age	16-34	*1436*	30.2	*49*	41.6	*14*	48.1	*1603*	30.7	0.005
	35-54	*2321*	35.7	*52*	29.2	*15*	36.9	*2543*	35.5	
	55-64	*2098*	25.2	*56*	23.8	*9*	11.9	*2307*	25.1	
	65+	*873*	8.9	*15*	5.4	*3*	3.1	*950*	8.7	
Ethnic group	White	*6212*	90.4	*154*	88.8	*35*	85.5	*6807*	90.2	0.600
	Black	*170*	3.0	*4*	1.5	*2*	5.0	*188*	3.0	
	South Asian	*179*	3.7	*6*	4.8	*2*	7.0	*199*	3.9	
	Mixed/other	*138*	2.9	*8*	4.9	*1*	2.5	*159*	2.9	
Marital status	Married	*3791*	63.2	*73*	50.4	*16*	53.1	*4133*	62.9	0.008
	Single	*1289*	22.6	*50*	34.3	*14*	31.4	*1428*	22.7	
	Divorced/Sep/ Widowed	*1648*	14.2	*49*	15.4	*11*	15.5	*1842*	14.4	
Econ. activity	Employed	*3625*	60.4	*96*	66.5	*22*	67.9	*3989*	60.5	0.214
	Unemployed	*144*	2.8	*4*	2.2	*3*	6.4	*164*	2.9	
	Econ. inactive	*2959*	36.8	*72*	31.3	*16*	25.7	*3250*	36.6	
Tenure	Owner occ.	*4766*	71.0	*94*	57.5	*14*	36.9	*5174*	70.3	<0.001
	Social renter	*1198*	16.0	*54*	25.4	*18*	38.7	*1357*	16.5	
	Private or other	*722*	13.0	*23*	17.2	*8*	24.4	*806*	13.3	
Edu-cation	Degree	*1287*	21.2	*21*	13.4	*2*	5.5	*1374*	20.5	0.018
	Teaching, HND, nursing	*495*	7.3	*12*	7.6	*4*	12.3	*542*	7.3	
	A Level	*865*	15.2	*12*	9.6	*10*	28.7	*938*	15.1	
	GCSE/ equivalent	*1636*	27.1	*38*	25.7	*8*	24.2	*1817*	27.5	
	Foreign/other	*261*	3.4	*9*	4.5	*0*	-	*286*	3.4	
	None	*2048*	25.8	*80*	39.1	*15*	29.2	*2278*	26.2	

***** Overall association between each characteristic and DSM score.

Table 2. Suicidal thoughts, suicide attempts, non-suicidal self-harm and methods of self-harm in all and in men, by DSM score (0, 1-2, 3+)

	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults	%	%	%	%	
Felt life not worth living, past year	6.0	8.1	20.9	6.2	0.005
Wished was dead, past year	4.7	5.1	17.1	4.8	0.012
Thought about suicide, past year	4.1	4.9	19.2	4.3	0.002
Suicide attempt, past year	0.6	1.2	4.7	0.7	0.036
Non-suicidal self-harm (NSSH), ever	4.9	3.8	22.4	5.2	<0.001
NSSH method: cut	2.0	1.5	7.1	2.1	0.192
NSSH method: burn	0.4	-	1.2	0.4	<0.001
NSSH method: poisoning	0.3	0.8	4.4	0.4	0.029
NSSH method: other	0.8	0.4	3.5	0.9	0.246
Men					
Felt life not worth living, past year	4.9	6.0	17.8	5.1	0.014
Wished was dead, past year	3.5	6.0	13.4	3.6	0.012
Thought about suicide, past year	3.2	3.7	15.9	3.4	0.005
Suicide attempt, past year	0.4	-	5.5	0.5	<0.001
Non-suicidal self-harm (NSSH), ever	4.5	1.5	19.5	4.8	0.001
NSSH method: cut	2.0	0.9	1.4	2.0	0.736
NSSH method: burn	0.6	-	1.4	0.6	<0.001
NSSH method: poisoning	0.2	-	5.2	0.3	<0.001
NSSH method: other	0.7	-	4.2	1.0	<0.001

***** Overall association between each characteristic and DSM score. Too few to examine by women only.

Table 3. General health, disability and impairment by DSM score (0, 1-2, 3+)

		DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults		%	%	%	%	
General health	Excellent/very good/good	80.8	78.6	68.6	80.6	0.155
	Fair/poor	19.2	21.4	31.4	19.4	
Activities of Daily Living (ADLs)	0	67.9	56.9	42.4	67.1	
	1	14.8	14.4	24.7	14.8	
	2 or more	17.3	28.7	32.9	18.0	<0.001
Intellectual impairment	Verbal IQ 70-85	15.8	25.0	50.0	16.2	<0.001
	Verbal IQ 86+	84.2	75.0	50.0	83.8	

***** Overall association between each characteristic and DSM score.

Table 4. Symptoms of common mental disorder (CMD) by DSM score (0, 1-2, 3+)

	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults	%	%	%	%	
Somatic symptoms	5.9	6.9	19.9	6.0	0.012
Fatigue	27.1	32.9	60.4	27.8	<0.001
Concentration and forgetfulness	9.0	16.8	39.4	9.5	<0.001
Sleep problems	29.6	33.4	50.7	30.1	0.045
Irritability	16.8	26.4	41.8	17.3	<0.001
Health worries	6.5	11.0	19.7	6.7	0.001
Depression	11.2	14.9	29.7	11.5	0.008
Depressive ideas	8.9	13.8	28.8	9.3	0.001
Worry	18.4	25.0	35.8	18.7	0.009
Anxiety	7.8	12.0	24.9	8.0	0.002
Phobias	5.2	11.0	23.6	5.5	<0.001
Panic	2.4	6.7	13.1	2.6	<0.001
Compulsions	3.8	4.3	10.5	4.0	0.115
Obsessions	5.0	6.7	8.4	5.2	0.455

***** Overall association between each characteristic and DSM score.

Table 5. Mental disorders by DSM score (0, 1-2, 3+)

	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults	%	%	%	%	
Any CMD	15.7	24.0	45.4	16.3	<0.001
Mixed anxiety and depression	8.3	13.3	18.0	8.4	0.024
Generalised anxiety disorder (GAD)	4.1	7.2	17.0	4.4	0.001
Depression	2.9	2.4	7.5	3.0	0.225
Phobias	1.9	4.5	12.7	2.0	0.001
Obsessive compulsive disorder (OCD)	1.1	2.2	5.7	1.1	0.034
Panic disorder	1.0	3.7	5.9	1.1	0.002
Post-traumatic stress disorder (PTSD)	2.7	5.1	12.8	3.0	0.007
Psychosis in the past year	0.4	0.4	3.5	0.4	0.101
Attention-deficient/hyperactivity disorder (ADHD)	7.8	17.7	25.8	8.2	<0.001
Autism traits (AQ 10+)	9.2	14.1	37.5	9.7	<0.001
Drug dependence	3.2	8.2	19.0	3.4	<0.001
Alcohol hazardous or harmful use (AUDIT score 8+)	21.3	42.8	49.1	22.0	<0.001
Regular smoker	21.3	35.3	37.6	22.1	<0.001

***** Overall association between each type of mental disorder and DSM score.

Table 6. Experience of stressful life events and adversity, by DSM score (0, 1-2, 3+)

All adults	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
Childhood adversity	%	%	%	%	
Local Authority Care before 16	2.1	1.5	5.8	2.1	0.405
Expelled from school	1.8	4.7	6.1	1.9	0.032
Run away from home	4.6	5.9	15.0	4.8	0.055
Sexually or physically abused as a child	11.3	19.0	19.1	11.8	0.015
Violence and abuse in adulthood					
Violence from a partner or sexual abuse	18.9	25.1	32.3	19.6	0.034
Bullied	20.0	20.0	33.4	20.3	0.226
Violence at work	2.7	5.3	11.0	2.9	0.025
Violence at home	8.2	12.5	12.5	8.5	0.144
Poverty and financial stress					
Ever been homeless	3.5	5.0	16.2	3.7	0.003
Currently living in poor housing	16.0	11.9	25.6	16.0	0.124
Used less fuel than needed due to worry about cost	14.0	21.6	33.9	14.4	0.001
In debt/disconnected in past year	8.4	13.6	33.1	9.1	<0.001
Ever made redundant	28.8	38.4	35.1	29.3	0.046
Ever looked for work 3+ months without success	20.3	27.1	21.0	20.8	0.131
Ever experienced a major financial crisis	8.9	11.1	17.4	9.2	0.155
Ever served in armed forces	10.0	8.1	12.1	10.0	0.631

***** Overall association between each characteristic and DSM score.

Table 7. Social, neighbourhood and regional context by DSM score (0, 1-2, 3+)

	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults	%	%	%	%	
Feel socially isolated (very much/sometimes)	19.8	32.4	53.7	20.4	<0.001
Strongly agree: I trust people around here	34.4	23.4	24.6	33.6	0.026
Strongly agree: I feel like I belong around here	48.8	39.0	37.5	48.3	0.032
Strongly agree: would like to move away from here	16.5	23.5	38.1	16.9	0.002
Index of Multiple Deprivation, lowest quintile	19.7	23.9	35.9	19.9	0.039
Region					
North East	5.3	3.1	5.5	5.1	
North West	13.5	17.2	18.1	13.5	
Yorkshire & The Humber	10.2	12.3	11.6	10.1	
East Midlands	8.4	10.5	4.4	8.6	
West Midlands	10.4	10.4	9.2	10.5	
East of England	11.3	12.3	14.3	11.1	
London	14.9	16.0	22.6	14.8	0.598
South West	10.0	3.3	2.5	10.1	
South East	16.1	14.9	11.8	16.2	

***** Overall association between each characteristic and DSM score.

Table 8. Current use of mental health treatment and services by DSM score (0, 1-2, 3+)[4]

	DSM score 0	DSM score 1-2	DSM score 3+	Total	P-value*
All adults	%	%	%	%	
Any psychotropic medication (current)	5.8	5.6	14.6	6.0	0.064
Antipsychotics	0.6	0.4	3.6	0.6	0.198
Antidepressants	4.5	5.2	12.4	4.7	0.070
Hypnotics	0.5	0.4	-	0.5	0.225
Anxiolytics	0.7	1.9	2.2	0.8	0.049
ADHD medication	0.0	-	1.0	0.0	<0.001
Any counselling (current)	2.5	1.4	17.1	2.6	<0.001
Community care (past quarter)	6.6	5.3	11.9	6.8	0.373
Health care for mental health reason (past quarter)	10.9	12.9	20.1	11.4	0.177
Self-help group (past quarter)	0.7	0.5	3.4	0.7	0.126

***** Overall association between each characteristic and DSM score.

[4] APMS 2007 collected information on use of a range current mental health treatment services, listed in this table. As shown, problem gamblers were more likely than those with a DSM score of 0 to be in receipt of counselling (17.1% vs 2.5%) but the great majority of at-risk and problem gamblers were not in receipt of mental health treatment or services around the time of the interview, indicating that research based on those in contact with services covers a minority of relevant people, and may be biased by the determinants of service contact.

Appendix B: Profile of those experiencing suicidal thoughts, suicide attempts and non-suicidal self-harm

Table 9. Sample profile: current demographic and socioeconomic profile by when last experienced suicidal thoughts

		When last experienced suicidal thoughts						Total		
		n	Past year %	n	Longer ago %	n	Never %	n	%	
Total:		*339*	4.3	*739*	9.4	*6311*	86.3	*7403*	100	
Characteristics:										**P value***
Sex	Men	*115*	38.2	*288*	44.4	*2789*	49.6	*2789*	48.6	0.001
	Women	*224*	61.8	*451*	55.6	*3522*	50.4	*3522*	51.4	
Age	16-34	*88*	36.6	*183*	33.8	*1330*	30.1	*1603*	30.7	0.042
	35-54	*165*	44.8	*330*	42.9	*2043*	34.2	*2543*	35.5	
	55-64	*66*	14.2	*201*	21.2	*2037*	26.1	*2307*	25.1	
	65+	*20*	4.4	*25*	2.1	*901*	9.7	*950*	8.7	
Ethnic group	White	*305*	89.9	*709*	96.3	*5779*	89.5	*6807*	90.2	<0.001
	Black	*8*	3.4	*9*	1.4	*171*	3.2	*188*	3.0	
	South Asian	*6*	2.0	*8*	1.0	*185*	4.3	*199*	3.9	
	Mixed/other	*12*	4.6	*9*	1.4	*138*	3.0	*159*	2.9	
Marital status	Married	*119*	42.3	*334*	54.7	*3676*	64.8	*4133*	62.9	<0.001
	Single	*105*	36.6	*175*	25.3	*1142*	21.7	*1428*	22.7	
	Divorced/Sep/ Widowed	*115*	21.0	*230*	19.9	*1493*	13.5	*1842*	14.4	
Econ. activity	Employed	*139*	44.1	*432*	62.8	*3413*	61.1	*3989*	60.5	<0.001
	Unemployed	*19*	9.5	*28*	4.9	*117*	2.3	*164*	2.9	
	Econ. inactive	*181*	46.5	*279*	32.4	*2781*	36.6	*3250*	36.6	
Tenure	Owner occ.	*170*	53.1	*445*	61.0	*4552*	72.2	*5174*	70.3	<0.001
	Social renter	*124*	33.7	*187*	23.1	*1040*	14.9	*1357*	16.5	
	Private or other	*38*	13.2	*100*	15.9	*667*	13.0	*806*	13.3	
Edu-cation	Degree	*51*	15.3	*143*	21.2	*1178*	20.7	*1374*	20.5	0.111
	Teaching, HND, nursing	*18*	6.0	*50*	6.2	*472*	7.5	*542*	7.3	
	A Level	*35*	11.1	*116*	19.3	*786*	14.8	*938*	15.1	
	GCSE or equivalent	*100*	33.7	*207*	30.5	*1506*	26.9	*1817*	27.5	
	Foreign/other	*14*	4.2	*24*	2.7	*248*	3.4	*286*	3.4	
	No qualifications	*107*	29.8	*179*	20.1	*1988*	26.7	*2278*	26.2	

***** Overall association between each characteristic and when last experienced suicidal thoughts.

Table 10. Sample profile: current demographic and socioeconomic profile by when last made a suicide attempt

		When last made a suicide attempt						Total		
		n	Past year	n	Longer ago	n	Never	n	%	
Total:		*52*	0.7	*335*	4.1	7008	95.2	7403	100	
Characteristics:										**P value***
Sex	Men	*14*	33.1	*111*	38.2	*3068*	49.1	*3068*	48.6	0.001
	Women	*38*	66.9	*224*	61.8	*3940*	50.9	*3940*	51.4	
Age	16-34	*13*	43.8	*93*	35.8	*1496*	30.4	*1603*	30.7	0.067
	35-54	*33*	48.6	*134*	38.3	*2373*	35.2	*2543*	35.5	
	55-64	*6*	7.6	*97*	23.5	*2203*	25.3	*2307*	25.1	
	65+	*0*	-	*11*	2.4	*936*	9.1	*950*	8.7	
Ethnic group	White	*49*	92.8	*313*	93.4	*6437*	90.0	*6807*	90.2	0.201
	Black	*1*	7.2	*8*	3.3	*179*	3.0	*188*	3.0	
	South Asian	*0*	-	*3*	0.5	*196*	4.0	*199*	3.9	
	Mixed/other	*0*	-	*8*	2.8	*151*	2.9	*159*	2.9	
Marital status	Married	*13*	31.4	*134*	51.1	*3983*	63.6	*4133*	62.9	<0.001
	Single	*19*	47.7	*81*	24.3	*1325*	22.5	*1428*	22.7	
	Divorced/Sep/ Widowed	*20*	20.9	*120*	24.6	*1700*	13.9	*1842*	14.4	
Econ. activity	Employed	*14*	30.3	*156*	50.5	*3815*	61.1	*3989*	60.5	<0.001
	Unemployed	*4*	10.6	*14*	4.9	*146*	2.7	*164*	2.9	
	Econ. inactive	*34*	59.2	*165*	44.6	*3047*	36.1	*3250*	36.6	
Tenure	Owner occ.	*18*	40.1	*161*	50.3	*4991*	71.4	*5174*	70.3	<0.001
	Social renter	*30*	55.8	*128*	34.6	*1196*	15.4	*1357*	16.5	
	Private or other	*3*	4.1	*42*	15.1	*760*	13.2	*806*	13.3	
Edu-cation	Degree	*7*	13.1	*40*	12.9	*1325*	20.9	*1374*	20.5	0.004
	Teaching, HND, nursing	*1*	1.1	*22*	6.6	*518*	7.4	*542*	7.3	
	A Level	*2*	4.1	*44*	14.9	*892*	15.2	*938*	15.1	
	GCSE or equivalent	*19*	42.5	*90*	32.2	*1706*	27.2	*1817*	27.5	
	Foreign/other	*0*	-	*16*	3.7	*270*	3.4	*286*	3.4	
	No qualifications	*20*	39.3	*111*	29.8	*2145*	25.9	*2278*	26.2	

***** Overall association between each characteristic and when last made a suicide attempt.

Table 11. Sample profile: current demographic and socioeconomic profile by ever engaged in non-suicidal self-harm (NSSH)

		NSSH				Total		
		n	Yes, ever	n	No	n	%	
Total:		*314*	5.2	*6618*	94.8	6941	100	
Characteristics:								**P value***
Sex	Men	*140*	44.5	*3051*	48.8	*3197*	48.6	0.194
	Women	*208*	55.5	*3993*	51.2	*4206*	51.4	
Age	16-34	*168*	57.6	*1435*	29.2	1603	30.7	<0.001
	35-54	*143*	34.9	*2394*	35.4	2543	35.5	
	55-64	*34*	6.7	*2271*	26.2	2307	25.1	
	65+	*3*	0.8	*944*	9.2	950	8.7	
Ethnic group	White	*322*	92.9	*6475*	90.0	6807	90.2	0.201
	Black	*5*	2.1	*183*	3.1	188	3.0	
	South Asian	*8*	1.6	*191*	4.0	199	3.9	
	Mixed/other	*11*	3.4	*147*	2.9	159	2.9	
Marital status	Married	*140*	45.1	*3987*	63.8	4133	62.9	<0.001
	Single	*141*	44.3	*1285*	21.5	1428	22.7	
	Divorced/sep/ widowed	*67*	10.7	*1772*	14.6	1842	14.4	
Economic activity	Employed	197	59.5	*3788*	60.6	3989	60.5	0.719
	Unemployed	18	6.4	*146*	2.7	164	2.9	
	Econ. inactive	133	34.1	*3110*	36.7	3250	36.6	
Tenure	Owner occ.	*170*	51.7	*4998*	71.3	5174	70.3	<0.001
	Social renter	*125*	32.8	*1228*	15.6	1357	16.5	
	Private or other	*51*	15.5	*754*	13.1	806	13.3	
Education	Degree	*67*	18.9	*1305*	20.6	1374	20.5	0.504
	Teaching, HND, nursing	*20*	6.3	*521*	7.4	542	7.3	
	A Level	*51*	16.9	*886*	15.0	938	15.1	
	GCSE or equivalent	*108*	32.5	*1708*	27.3	1817	27.5	
	Foreign/other	*11*	2.8	*274*	3.4	286	3.4	
	No qualifications	*84*	22.6	*2190*	26.4	2278	26.2	

***** Overall association between each characteristic and whether ever engaged in NSSH.

Table 12. Problem gambling criteria by when last experienced suicidal thoughts

	Last had suicidal thoughts				
All adults	**Past year**	**Longer ago**	**Never**	**Total**	**P value***
DSM criteria	%	%	%	%	
Preoccupied with gambling (DSM1)	1.3	0.8	1.1	1.1	0.755
Gambles with increasing amounts of money (DSM2)	1.9	0.4	0.6	0.6	0.098
Made unsuccessful efforts to control, cut back, or stop gambling (DSM3)	3.0	2.0	1.1	1.2	0.019
Restless or irritable when trying to cut down (DSM4)	0.6	0.5	0.3	0.3	0.477
Gamble to escape problems (DSM5)	2.8	3.0	0.6	0.9	<0.001
After losing money, returns another day to get even (DSM6)	3.4	2.4	1.1	1.3	0.007
Lies to family members, therapists to conceal gambling (DSM7)	1.3	1.1	0.3	0.4	0.025
Committed illegal acts to finance gambling (DSM8)	0.2	0.4	0.2	0.2	0.490
Jeopardised or lost a significant relationship, job because of gambling (DSM9)	0.2	0.9	0.2	0.3	0.033
Relies on others to finance gambling (DSM10)	0.2	0.4	0.3	0.3	0.757
DSM score					
1 or 2	2.9	3.0	2.5	2.5	
3 or more	3.2	1.6	0.5	0.7	<0.001

Table 13. Problem gambling criteria by when last made a suicide attempt

	Last made a suicide attempt				
All adults	**Past year**	**Longer ago**	**Never**	**Total**	**P value***
DSM criteria	%	%	%	%	
Preoccupied with gambling (DSM1)	3.6	1.4	1.1	1.1	0.457
Gambles with increasing amounts of money (DSM2)	5.0	0.7	0.6	0.6	0.052
Made unsuccessful efforts to control, cut back, or stop gambling (DSM3)	5.2	3.4	1.1	1.2	0.005
Restless or irritable when trying to cut down (DSM4)	-	0.9	0.3	0.3	<0.001
Gamble to escape problems (DSM5)	1.3	4.6	0.7	0.9	<0.001
After losing money, returns another day to get even (DSM6)	4.9	4.8	1.2	1.3	0.001
Lies to family members, therapists to conceal gambling (DSM7)	-	3.1	0.3	0.4	<0.001
Committed illegal acts to finance gambling (DSM8)	-	0.7	0.2	0.2	<0.001
Jeopardised or lost a significant relationship, job because of gambling (DSM9)	-	1.2	0.2	0.3	<0.001
Relies on others to finance gambling (DSM10)	-	0.9	0.3	0.3	<0.001
DSM score					
1 or 2	4.9	4.0	2.5	2.5	
3 or more	5.2	3.7	0.5	0.7	<0.001

***** Overall association between each DSM characteristic and whether made a suicide attempt in the past year (if none with the DSM criteria reported past year attempt, significance test was based in ever reported suicide attempt).

Table 14. Problem gambling criteria by ever engaged in non-suicidal self-harm (NSSH)

	Suicide attempt made			
All adults	**Yes**	**No**	**Total**	**P value***
DSM criteria	%	%	%	
Preoccupied with gambling (DSM1)	1.5	1.1	1.1	0.463
Gambles with increasing amounts of money (DSM2)	1.5	0.6	0.6	0.102
Made unsuccessful efforts to control, cut back, or stop gambling (DSM3)	1.7	1.2	1.2	0.463
Restless or irritable when trying to cut down (DSM4)	0.3	0.3	0.3	0.900
Gamble to escape problems (DSM5)	4.3	0.7	0.9	<0.001
After losing money, returns another day to get even (DSM6)	2.5	1.3	1.3	0.140
Lies to family members, therapists to conceal gambling (DSM7)	1.3	0.4	0.4	0.104
Committed illegal acts to finance gambling (DSM8)	0.3	0.2	0.2	0.636
Jeopardised or lost a significant relationship, job because of gambling (DSM9)	0.3	0.3	0.3	0.816
Relies on others to finance gambling (DSM10)	0.3	0.3	0.3	0.765
DSM score				
1 or 2	1.9	2.6	2.5	
3 or more	3.1	0.6	0.7	<0.001

***** Overall association between each characteristic and experience of non-suicidal self-harm.

Table 15. General health, disability and impairment by when last experienced suicidal thoughts

		Past year	Longer ago	Never	Total	P-value*
All adults		%	%	%	%	
General health	Excellent/very good/good	58.5	74.5	82.5	80.6	<0.001
	Fair/poor	41.5	25.5	17.5	19.4	
Activities of Daily Living (ADLs)	0	35.7	57.7	69.8	67.1	0.003
	1	20.9	17.7	14.2	14.8	
	2 or more	43.4	24.6	16.0	18.0	
Intellectual impairment	Verbal IQ 70-85	26.2	12.8	16.1	16.2	<0.001
	Verbal IQ 86+	73.8	87.2	83.9	83.8	

***** Overall association between each characteristic and suicidal thoughts

Table 16. General health, disability and impairment by when last made a suicide attempt

		Past year	Longer ago	Never	Total	P-value*
All adults		%	%	%	%	
General health	Excellent/very good/	13.5	31.4	53.8	52.6	<0.001
	Good/fair/poor	86.5	68.6	46.2	47.4	
Activities of Daily Living (ADLs)	0	28.2	43.5	68.5	67.1	<0.001
	1	17.7	23.3	14.4	14.8	
	2 or more	54.0	33.2	17.1	18.0	
Intellectual impairment	Verbal IQ 70-85	40.3	20.1	15.8	16.2	0.001
	Verbal IQ 86+	59.7	79.9	84.2	83.8	

***** Overall association between each characteristic and suicide attempts

Table 17. Mental disorders by when last had suicidal thoughts

	Past year	Longer ago	Never	Total	P-value*
All adults	%	%	%	%	
Any CMD	75.3	36.5	11.0	16.3	<0.001
Mixed anxiety and depression	23.1	18.9	6.5	8.4	<0.001
Generalised anxiety disorder (GAD)	28.8	10.3	2.5	4.4	<0.001
Depression	28.9	5.5	1.4	3.0	<0.001
Phobias	19.4	4.8	0.8	2.0	<0.001
Obsessive compulsive disorder (OCD)	15.3	1.0	0.4	1.1	<0.001
Panic disorder	6.0	2.6	0.7	1.1	<0.001
Post-traumatic stress disorder (PTSD)	22.6	8.1	1.4	3.0	<0.001
Psychosis in the past year	5.1	1.2	0.1	0.4	<0.001
Attention-deficient/hyperactivity disorder (ADHD)	34.7	18.6	5.8	8.2	<0.001
Autism traits (AQ 10+)	24.1	13.7	8.5	9.7	<0.001
Drug dependence	14.6	8.1	2.4	3.4	<0.001
Alcohol hazardous or harmful use (AUDIT score 8+)	32.8	28.1	20.8	22.0	<0.001
Regular smoker	41.1	36.3	19.6	22.1	<0.001

***** Overall association between each type of mental disorder and suicidal thoughts

Table 18. Mental disorders by when last made a suicide attempt

	Past year	Longer ago	Never	Total	P-value*
All adults	%	%	%	%	
Any CMD	84.2	49.6	14.3	16.3	<0.001
Mixed anxiety and depression	17.8	20.9	7.8	8.4	<0.001
Generalised anxiety disorder (GAD)	37.6	14.3	3.7	4.4	<0.001
Depression	39.0	12.5	2.3	3.0	<0.001
Phobias	28.8	10.3	1.5	2.0	<0.001
Obsessive compulsive disorder (OCD)	26.0	5.2	0.8	1.1	<0.001
Panic disorder	13.6	4.1	0.9	1.1	<0.001
Post-traumatic stress disorder (PTSD)	29.4	15.2	2.2	3.0	<0.001
Psychosis in the past year	17.7	3.7	0.2	0.4	<0.001
Attention-deficient/hyperactivity disorder (ADHD)	44.3	22.6	7.4	8.2	<0.001
Autism traits (AQ 10+)	32.2	18.6	9.1	9.7	<0.001
Drug dependence	20.0	12.3	2.9	3.4	<0.001
Alcohol hazardous or harmful use (AUDIT score 8+)	53.2	29.9	21.4	22.0	<0.001
Regular smoker	57.4	49.2	20.7	22.1	<0.001

***** Overall association between each type of mental disorder and suicide attempts

Table 19. Experience of stressful life events and adversity, by when last had suicidal thoughts

All adults	**Past year**	**Longer ago**	**Never**	**Total**	**P-value***
Childhood adversity	%	%	%	%	
Local Authority Care before 16	4.8	5.1	1.7	2.1	<0.001
Expelled from school	4.8	4.9	1.4	1.9	<0.001
Run away from home	17.6	15.4	3.0	4.8	<0.001
Sexually or physically abused as a child	33.4	29.9	8.7	11.8	<0.001
Violence and abuse in adulthood					
Violence from a partner or sexual abuse	45.5	43.1	15.7	19.6	<0.001
Bullied	43.3	41.4	16.8	20.3	<0.001
Violence at work	3.6	5.7	2.6	2.9	<0.001
Violence at home	25.9	25.8	5.8	8.5	<0.001
Poverty and financial stress					
Ever been homeless	11.0	12.7	2.3	3.7	<0.001
Currently living in poor housing	29.7	27.3	14.1	16.0	<0.001
Used less fuel than needed due to worry about cost	31.7	26.1	12.2	14.4	<0.001
In debt/disconnected in past year	24.0	16.5	7.5	9.1	<0.001
Ever made redundant	35.4	38.6	27.9	29.3	<0.001
Ever looked for work 3+ months without success	34.5	33.5	18.6	20.8	<0.001
Ever experienced a major financial crisis	20.3	21.1	7.3	9.2	<0.001
Ever served in armed forces	7.1	8.7	10.3	10.0	0.105

***** Overall association between each characteristic and suicidal thoughts

Table 20. Experience of stressful life events and adversity, by when last made a suicide attempt

All adults	**Past year**	**Longer ago**	**Never**	**Total**	**P-value***
Childhood adversity	%	%	%	%	
Local Authority Care before 16	2.9	11.4	1.7	2.1	<0.001
Expelled from school	8.3	6.5	1.6	1.9	<0.001
Run away from home	31.0	23.8	3.8	4.8	<0.001
Sexually or physically abused as a child	43.5	41.1	10.3	11.8	<0.001
Violence and abuse in adulthood					
Violence from a partner or sexual abuse	53.0	50.8	18.0	19.6	<0.001
Bullied	49.5	45.6	19.0	20.3	<0.001
Violence at work	3.6	5.9	2.8	2.9	0.011
Violence at home	29.3	34.9	7.2	8.5	<0.001
Poverty and financial stress					
Ever been homeless	20.3	18.4	2.9	3.7	<0.001
Currently living in poor housing	35.7	27.7	15.3	16.0	<0.001
Used less fuel than needed due to worry about cost	35.4	30.5	13.5	14.4	<0.001
In debt/disconnected in past year	34.1	22.3	8.3	9.1	<0.001
Ever made redundant	36.4	36.2	28.9	29.3	0.016
Ever looked for work 3+ months without success	26.8	31.6	20.2	20.8	<0.001
Ever experienced a major financial crisis	22.0	23.5	8.5	9.2	<0.001
Ever served in armed forces	3.4	7.9	10.1	10.0	0.065

***** Overall association between each characteristic and suicide attempts.

Table 21. Social, neighbourhood and regional context by when last had suicidal thoughts

	Past year	Longer ago	Never	Total	P-value*
All adults	%	%	%	%	
Feel socially isolated (very much/sometimes)	73.0	42.4	15.3	20.4	<0.001
Strongly agree: I trust people around here	19.3	24.4	35.4	33.6	<0.001
Strongly agree: I feel like I belong around here	36.2	36.3	50.2	48.3	<0.001
Strongly agree: would like to move away from here	34.4	25.2	15.1	16.9	<0.001
Index of Multiple Deprivation, lowest quintile	33.6	21.9	19.0	19.9	<0.001
Region					
North East	6.3	4.3	5.2	5.1	
North West	13.9	11.2	13.7	13.5	
Yorkshire & The Humber	10.6	11.7	10.0	10.1	
East Midlands	7.4	10.2	8.5	8.6	
West Midlands	12.4	11.5	10.3	10.5	
East of England	10.6	10.1	11.2	11.1	
London	14.4	12.9	15.0	14.8	0.576
South West	9.8	10.4	10.1	10.1	
South East	14.7	17.7	16.1	16.2	

***** Overall association between each characteristic and suicidal thoughts

Table 22. Social, neighbourhood and regional context by when last made a suicide attempt

	Past year	Longer ago	Never	Total	P-value*
All adults	%	%	%	%	
Feel socially isolated (very much/sometimes)	78.2	48.4	18.8	20.4	<0.001
Strongly agree: I trust people around here	10.4	23.6	34.2	33.6	<0.001
Strongly agree: I feel like I belong around here	31.8	35.5	49.0	48.3	<0.001
Strongly agree: would like to move away from here	55.0	30.1	16.0	16.9	<0.001
Index of Multiple Deprivation, lowest quintile	36.8	31.5	19.3	19.9	<0.001
Region					
North East	8.8	5.2	5.1	5.1	
North West	17.3	12.3	13.5	13.5	
Yorkshire & The Humber	6.7	10.6	10.1	10.1	
East Midlands	8.2	11.2	8.5	8.6	
West Midlands	9.6	9.8	10.5	10.5	
East of England	15.2	11.6	11.0	11.1	
London	13.8	14.2	14.8	14.8	0.972
South West	10.9	9.5	10.1	10.1	
South East	9.5	15.7	16.2	16.2	

***** Overall association between each characteristic and suicide attempts

Appendix C: References

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