The Association between Demographic Factors, Mental Health and Gambling Behaviour

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Abstract

Gambling behaviour and its impact on mental health is an area of great interest, particularly with the growing rate of gambling participation. The current study aims to extend previous research by investigating differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, In-Person Gamblers and Online Gamblers and the association between Gender, Employment Status, Age and the Likelihood to Gamble. This was investigated through a quantitative, cross sectional survey design. Volunteer participants were made up of 155 individuals (females=101, males=54) and ranged in age from 19 to 74 years old. A single online 92 item survey was used in order to gather data. Analysis showed no significant difference for differences in Mental Health between Non-Gamblers, In-Person Gamblers and Online Gamblers while the association between Gender, Employment Status, Age and the Likelihood to Gamble was partially supported. More research would need to be conducted to further investigate these results.
1. Introduction

1.1 Overview

Gambling goes back through history for thousands of years with gambling games having been found in the pyramids, it has also been mentioned in the Bible in the form of the casting of lots, which is an early form of dice. Most cultures around the world have engaged in some form of gambling (Schwartz, as cited by Ferentzy and Turner p.6 2013).

Gambling is ingrained in modern society, which is reflected in the number of people who participate in gambling activities, a 2016 study found that 48% of people had participated in gambling in the past four weeks (U.K. Gambling Commission Annual Report, 2017).

There are a large number of bookmakers in Ireland. There are approximately 1,100 bookmaker shops (Gamble Aware Ireland, 2011) not including casinos, lottery draws and online gambling sites which make gambling activities easily accessible.

Gambling participation is also on the rise, with online gambling allowing people to gamble on the go and in the comfort of their own home. In 2016 it was found that an average of 17% of individuals had gambled online, this was a 2% increase from 2013. The largest increase in online gambling was seen amongst younger age groups with 37% of 16 to 34 year old having gambled online (U.K. Gambling Commission Annual Report, 2017).
This ease of access may have serious consequences for mental health and social implications. As Reith et al (2006) notes, social implications have been recognised as being associated with gambling activity. These social implications include relationship problems, for example, familial instability, an increased risk to commit crime, higher rates of alcoholism and drug addiction and financial problems and debt (p. 42-45).

There is also an increased risk of poor mental health as result of gambling. Reith et al also stated that approximately 60% of people with gambling problems indicated they had experienced depression as a result of gambling (Australian Productivity Commission, as cited by Reith et al 2006 p.43). While another study found that problem gamblers were more inclined than non-gamblers to meet the criteria for major depression, phobias, somatic symptoms, antisocial personality disorder, alcoholism, and nicotine dependence (Cunningham-Williams et al, 1998 p.1095)

1.2 Definition of gambling

Gambling can be described as consisting of three elements; consideration, chance and prize (Rose, as cited in Rose 2005 p. 2). Shaffer and Korn (2002) state that gambling is the act of risking something of value [for example money] on the result or outcome of an event [for example a horse race] when the probability of winning or losing is less than certain (p. 173) It may also be noted that gamblers have variable awareness of the risk and chance and that the bet is irreversible (Ladouceur and Walker, as cited in Shaffer and Korn 2002 p. 173). Simply put, gamblers may not be fully aware of the risk involved in their actions; as such gambling may have detrimental personal and societal effects.
1.3 Prevalence of gambling

Gambling in modern times continues to be a popular activity, as Gamble Aware Ireland (2011) notes, the overwhelming majority of people who gamble are not problem gamblers, for the majority of those who do, gambling is an entertaining form of recreation.

Gambling in Ireland is a huge industry, as of 2010 it was estimated that Irish people gamble over €5 billion per year. Almost 44% of the Irish adult population play the National Lottery regularly, while roughly 12% of Irish adults bet with a bookmaker weekly and approximately 2% of Irish adults gamble online regularly. Ireland has approximately 1,100 bookmaker shops, not including Private Members Clubs and Casinos, Gaming Arcades and gaming machines (Gamble Aware Ireland, 2011).

A recent study conducted in the U.K. for the Gambling Commission Annual Report (2017) ‘Gambling Participation in 2016: behaviour, awareness and attitudes,’ found that 48% of people had participated in a form of gambling in the past four weeks this was an increase in participation of 3% since 2015.

Men were more likely to gamble than women, with 53% of men reporting participating in gambling, while 44% of women reporting participating in gambling activities.

Those who participated in gambling were more likely to be between 35 and 64 years old, however this was due mainly by participation in the National Lottery, which is the most popular activity, followed by scratchcards and other lotteries. When those who participated in the national lottery responses were excluded, the age range changed to 25 to 34 years old and 16 to 24 years old for those who were more likely to gamble.
While not as likely overall to have gambled, there has been a rise in participation in younger age groups, with 38% of 16 to 24 year olds and 48% of 25 to 34 year olds having gambled in the past four weeks. This is up by 5% and 10% respectively from 2015.

It was also found that an average of 17% of participants had gambled online, this was a slight increase from 15% in 2013. The largest increase in online participation was seen amongst younger age groups with 16% of 16 to 24 year olds and 21% of 25 to 34 year old having gambled online, this was an increase of 7% and 5% respectively from 2015.

During the survey participants were also asked how often they spent money on various gambling activities in the last four weeks. It was found that the highest frequency with which people participated in any individual gambling activity, with 35% responding ‘once a week’. This was followed by ‘once a month but less than once a week’ at 29%, ‘two or more days a week’ at 23% and finally ‘less than once a month’ at 13%.

Another study by the U.K. Gambling Commission: ‘Trends in Gambling Behaviour 2008-2014’ found that participation in online betting had increased significantly, from 1.9% in 2009 to 3.3% in 2014. The same trend was observed for most demographic sub-groups, most notably was amongst individuals aged 18 to 34 which went from 3.4% to 7%.

The survey also found that unemployed gamblers appeared to be more likely than employed gamblers to participate in certain gambling activities such as virtual gaming machines, slot or fruit machines, and betting through a betting exchange.

It was noted that the proportion of gamblers belonging to the most affluent social group which is the AB social grade category, which can be
defined as ‘Higher and intermediate managerial / administrative / professional occupations’ (U.K. Office for National Statistics, 2011) increased from 50.7% in 2009 to 53.6% in 2014.

Remote gambling which is described in the U.K. Gambling Act (2005) as involving the use of remote communications, including: internet, telephone, television, radio and any other form of electronic or technological communication.

An increase in the use of remote gambling was also seen among people belonging to the AB social grade category, going from 11.9% in 2008 to 18.7% in 2014.

A survey investigating gambling behaviour in Great Britain in 2015 found a difference in gambling activity between those who were in employment or training and those who were unemployed, retired and other economically inactive groups. Respondents in employment or training were more likely to have gambled, with 69% having spent money on gambling while those who were unemployed, retired or economically inactive gambling participation was reported as between 55% and 57%. (Conolly 2017 p.18)

There has been a considerable amount of research done with regard the question ‘who gambles and why?’ Shaffer and Korn (2002) reported that gambling participation rates in general increase with household income, however, lower-income households spent proportionately more of their money on gambling than higher-income households.

It was also noted that poverty is often associated with increased financial risk taking, as the magnitude of the win is perceived as greater; however, the magnitude of the loss is also comparably greater than those with money to spare.
1.4 Online gambling

It is interesting to note the impact of online gambling with regard to the increase in gambling activities. Wardle et al (2011) argues that online gambling is one of the most important areas in the gambling field of study and despite its increasing prominence there has been relatively little empirical examination. They also note that “significant challenges face researchers seeking to examine online gambling behaviour, as online gamblers represent a hard-to-reach and sometimes hidden population” (p.339) making past research scarce.

Gainsbury et al (2012) also notes that online gambling is one of the fastest growing sectors of e-commerce and is a rapidly growing mode of gambling. Further stating how little is known about internet gamblers or their engagement with both Internet and non-Internet forms of gambling. Following an online survey it was found that there was a tendency for Internet gamblers to be male, have high incomes and be well educated, which is in line with the later U.K. findings referred to above.

Gainsbury notes in ‘Online Gambling Addiction: the Relationship Between Internet Gambling and Disordered Gambling’ (2015) that online gambling, sometimes referred to as internet or remote gambling, can be done through a range of internet-enabled devices, including computers, mobile and smart phones, tablets and digital television. Through this ease of access that there is the ability for large wagers, continuous gambling, rapid feedback, and instant access to a vast number of betting options. This has resulted in concerns that Internet gambling could contribute to excessive gambling (p.185).
An earlier study conducted by Gainsbury et al (2011) found that participation in online gambling was greatest for race wagering and sports betting, for example on horses and football, with online poker and Internet casino games for example, gaming machines, blackjack and roulette used less frequently. The results also showed that online or internet gamblers were more involved than those who didn’t gamble through the internet; there was a tendency to participate in significantly more gambling forms and to gamble more frequently than non-Internet gamblers. There was no significant difference in amounts of money gambled, however there was extremely high variability making it difficult to analyse (p.4). The study also found that internet gamblers attitudes were significantly more positive towards gambling than the non-Internet gamblers, conversely approximately 15% of the Internet gamblers that were surveyed indicated that there was a poorer social atmosphere by gambling online and was it more addictive than land-based gambling (p.4).

1.5 Perceived norms and gambling

This perception around gambling is an interesting topic to note, as perceived social norms have an impact on and help to shape behaviour, in this case gambling behaviour. Meisel and Goodie (2014) note that social norms have a fundamental impact on behaviour, however despite this, little research has examined social norms regarding gambling and no research has investigated possible interaction effects (p.592).

A 2003 study by Larimer and Neighbors which examined college student gambling and perceived norms found the results to be consistent with past research on addictive behaviour. They found that that the participants
over-perceived descriptive norms for gambling behaviour, which suggesting that a contributing factor to the maintenance of high-risk behaviours is the misperception of the norm (p.241).

However, in some cases modern Online Gambling sites may offer a ‘Cash Out’ option mid play, where the gambler may take the odds and money offered at that time, this may give a sense of lower risk.

1.6 Impact of gambling on mental health

When looking these results of over-perceived norms, along with the positive attitudes towards gambling by internet gamblers and the indication of a poorer social atmosphere it may be hypothesised that those who gamble online may have poorer mental health than those who don’t gamble online, or refrain from gambling completely.

It is well documented by previous research that problem gamblers have poorer mental health. Gamblers Anonymous in the U.S found that 13% had attempted suicide, compared with 1.1% for the general population (Frank et al, as cited by Reith et al 2006 p43). While another study in 1997 found that Las Vegas, a city known for gambling, has the highest rate of suicide in America, for both residents and visitors (Phillips, as cited by Reith et al 2006 p43).

Some individuals who gamble suffer from pathological gambling (PG) which is an impulse control disorder characterised by persistent and recurrent maladaptive behaviour (American Psychiatric Association, as cited by Rodriguez-Monguio et al, 2017 p.406). PG is known to be associated with other psychiatric disorders. The disorders most often comorbid with PG include mood disorders, including bipolar disorders and major depressive
affective disorders, personality disorders and anxiety disorders are most often comorbid with PG (Chou et al; Kim et al; as cited by Rodriguez-Monguio et al, 2017 p.406).

One study notes many pathological gamblers have elevated stress levels which are not just confined to the time of gambling participation. They may experience increased levels of debt and urgency to gamble, this in turn may create conditions of chronic stress (Natelson, as cited by Fong 2005 p.25). In addition to chronic stress, pathological gamblers have also been found to have an abnormal response to acute stress. It was demonstrated that within casinos, pathological gamblers were more inclined to have a higher level of stress hormones in comparison to non-pathological gamblers (Mayer et al 2000; Meyer et al 2004; as cited by Fong 2005 p.25-26).

Shaffer and Korn (2002) note that previous research suggests that the frequency of cases of dysthymia (persistent mild depression), depression, suicidal ideation, and suicide attempts is exaggerated amongst disordered gamblers (p.192). They go on to discuss anxiety as a hallmark trait in gamblers seeking treatment, stating that this is more representative of anxious depression than of an anxiety disorder (p.193).

An article by Reith et al (2006) note that the Australian Productivity Commission found that approximately 60% of people with gambling problems indicated that they had experienced depression as a result of gambling behaviours. It was also reported that approximately 9% had considered suicide (Australian Productivity Commission, as cited by Reith et al 2006 p.43).

A later study which focused on comorbid pathological gambling, mental health, and substance use disorders found that between 2009 and 2012,
of treatment-seeking patients 51.4% had PG as a principal diagnosis (what occasioned their admission)\(^1\) while 42.9% had PG as a primary diagnosis (the main condition treated or investigated)\(^2\). The most common primary diagnoses, for patients who had PG as a principal diagnosis, was anxiety, dissociative and somatoform disorders (27.8%), episodic mood disorders (25.6%), and depressive disorders (13.3%). These statistics clearly highlight the intertwined relationship between gambling behaviour and poor mental health (Rodriguez-Monguio et al, 2017 p.408).

A study by Cunningham-Williams et al (1998) found that problem gamblers were more prone than non-gamblers to meet the criteria for major depression, phobias, somatic symptoms, antisocial personality disorder, alcoholism, and nicotine dependence. Interestingly they also noted that even recreational gamblers were more prone to meet psychiatric criteria than non-gamblers (p.1095)

1.7 Rationale and aim of current study

A large amount of previous gambling related research when looking at mental health refers to pathological or problem gamblers, however there is little research or data on the mental health of the average or recreational gambler. Gamble Aware Ireland states that the large majority of people who participate in gambling activities don’t have a problem with it and for the majority of those who do bet, gambling is an entertaining form of recreation (2011). As noted above even recreational gamblers were more prone to meet psychiatric criteria than non-gamblers, with this in mind, this study aims to

\(^1\) & \(^2\) - ICD-10-CM Official Guidelines for Coding and Reporting (2016)
survey the general population, without a focus on problem or pathological gamblers. This study will aim to fill this gap in the current research by giving up to date data by answering the following questions:

‘Who is gambling?’

‘How often are they gambling?’

‘How much are they spending and winning?’

‘What mode of gambling do they use?’

‘What is the perception of average gambling behaviour?’

‘What are the implications for mental health?’

1.8 Hypothesis 1

It is hypothesised that there will be a difference in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, In-Person Gamblers and Online Gamblers, with In-Person and Online Gamblers having poorer Mental Health, specifically those who gamble online as they may be more involved gamblers.

1.9 Hypothesis 2

It is hypothesised that Gender will impact the Likelihood to Gamble with men being more likely to do so. That Employment Status playing a role in the Likelihood to Gamble, with those in Employment more likely to gamble and finally that Age will impact the Likelihood to Gamble with individuals above the age of 35 years old more likely to gamble.
2. Methodology

2.1 Introduction

This chapter will discuss the methodology of the study. This includes a description of the participants, the study design, the procedure implemented, materials used, the tests used for data analysis and the ethics of the study.

2.2 Participants

The target audience for this study was both male and females aged 18 and up. Participants who engaged in gambling activities and also those who refrained from engaging in such activities were also targeted. In order to access this sample, convenience and snowball sampling was used.

There were a total of 155 participants which included 101 females, which accounted for 65% of the sample while the remaining 35% was made up of 54 males. Participants ranged in age from 19 to 74 with a mean age of 34 years old. Of these participants 135, (87%) were in employment while the remaining 20 (13%) were unemployed at the time of participation.

_Inclusion criteria:_

Men and women over the age of 18, both gamblers and non-gamblers

_Exclusion criteria:_

Men and women under the age of 18
2.3 Design

A quantitative, cross sectional survey design was employed. This was used to investigate differences and associations between Gender, Age, Employment Status, Gambling Behaviours and Mental Health (Depression, Anxiety and Stress). A single online survey was used in order to gather data. Participants were self-assigned into groups based upon their survey responses.

2.4 Procedure

Access was gained through the use of social media (Facebook) by posting and sharing a link to the online survey, email and direct messaging were also used. Both gamblers and non-gamblers were invited to participate. The volunteers were given no reward or incentive for their participation. The voluntary participants were directed to an online survey which explored the relationship between gambling habits and mental health.

The survey (see appendices) began by showing participants a cover sheet which was comprised of an outline of the topic of the questionnaire, describing it as exploring gambling and mental health. It was explained that the topics raised may cause some minor negative feeling, however support service information would be provided following the survey. It was also explained that participation in the survey was completely voluntary and there was no obligation to take part, that participation was anonymous and confidential and that by completing and submitting the questionnaire that they were consenting to participate in the study. Researcher contact details were also provided in the form of an email address.
Participants then completed the remaining sections which explored demographics, gambling participation, gambling habits, perceptions and mental health. Those who answered “no” to having ever gambled did not complete the gambling participation and habits sections. Following completion and submission of the questionnaire the participants were brought to a final page which thanked them for their participation and directed them to relevant support services.

2.5 Materials

The materials used for this study consisted of a 92 item online survey (see appendix). The survey was created using Google Forms. The survey was comprised of three well known questionnaires along with demographic questions. An introductory cover sheet was included which outlined the nature of the study, anonymity, confidentiality and researcher details (see appendix). This was followed by demographic questions which included gender, age, employment status and whether or the participant had ever participated in gambling activities. If the participant answered “no” to having ever gambled they were taken directly to the gambling perception and mental health section of the survey, while the gambling participation section was skipped. Following the survey there was also a list of relevant support services. The analysis of the collected data was done using SPSS software version 24.

The first measurement used was taken from the Gambling Commission UK, ‘Gambling participation in 2016: behaviour, awareness and attitudes’ Annual Report February 2017 (see appendix). The annual report collects online and telephone interview data, with the online data being
collected quarterly in March, June, September and December. Approximately 2,000 responses were collected each quarter. This investigated gambling participation in the last four weeks.

The questions used were taken from the online survey script. Three questions were taken each with subsections. The first question investigated gambling participation in the last four weeks, 22 subsections of gambling activities were listed with a “yes” or “no” response possible. “No” was coded as “0” and “yes” as “1” for scoring purposes. The second question investigated how participants spent money on gambling activities in the last four weeks, 15 subsections of gambling activities were listed with “online”, “in-person” and “both” responses possible, these were scored on a three point scale. The third and final question investigated how often money was spent online on the listed gambling activities. There were 17 gambling activities listed with five possible answers, “everyday”, “2+ days a week”, “once a week” “at least once a month” and finally “less than once a month”, which were scored on a five point scale. For the participants who had not engaged in the gambling activities listed in the last four weeks, responses for question 2 and 3 could be left unanswered.

The second questionnaire used was taken from a study ‘Measuring Gambling Outcomes Among College Students’ (Neighbors et al 2002) in which the ‘The Gambling Quantity and Perceived Norms Scale’ was used (see appendix). The original survey used dollars however this was changed to euro for the purpose of this study.

Respondents were asked approximately how much spending money (disposable income) they have each month, possible responses ranged from
“less than €50” to “more than €500”, responses were scored on an 11 point scale. Participants were also asked how often they gamble, responses ranged from “never” to “every day” and was scored on a 10 point scale.

The survey had six questions which assessed money spent on gambling and was designed to be used as a gambling quantity measure. These questions investigated approximately how much money was spent/lost in the last month and year, on average how much money is spent/lost per month, approximately how much money was won in the last month and year and on average how much money is won per month, responses were marked on a 10 point scale.

Finally, participants answered a perceived norms scale. The first question asked how often they thought the average person gambled, answers ranged from “never” to “every day”, this was scored on a ten point scale. The following four questions asked how much money they think the average person spends/loses per month and per year and how much money they think the average person wins per month and per year. It was reported that the gambling quantity subscale of the ‘Gambling Quantity and Perceived Norms Scale’ showed good reliability with an alpha score of .89. The six quantity questions (amounts won and lost) loaded highly on a single factor, which ranged from .77 to .85 (Neighbors et al 2002 p.5).

Lastly, the Depression, Anxiety, Stress Scale 21 (DASS-21) was used to measure Mental Health. The DASS-21 is a short form version of Lovibond and Lovibond’s (1995) original 42-item self-report measure of depression, anxiety, and stress (Lovibond and Lovibond, as cited by Henry and Crawford, 2005). The short version was used in order to make the survey more
accessible to the participant. The validity of the DASS-21 was confirmed as a measure for Depression, Anxiety and Stress. It was also found that each of these sub-scales can be used to measure more general dimension of psychological distress or negative affectivity according to Henry and Crawford (2005).

The DASS-21 comprises of seven statements relating to Depression, seven to Anxiety and seven to Stress. The participant was instructed to indicate how much each statement applied to them over the past week. It is measured using a four point Likert scale. The rating scale was as follows; “0” – “Did not apply to me at all”, “1” – “Applied to me to some degree, or some of the time”, “2” – “Applied to me to a considerable degree, or a good part of time” and “3” – “Applied to me very much, or most of the time”.

The DASS-21 is a frequently used and reliable measure of Depression, Anxiety and Stress. In a study by Henry and Crawford (2005) which investigated the reliability and validity of the DASS-21 reported an Alpha score of .88 for Depression, .82 for Anxiety, .90 for Stress, and .93 for the total scale.

2.6 Data analysis

Descriptive statistics were run to illustrate the median, mean, mode and standard deviation of various variables including; Age, Gender, Employment Status, participation in gambling activities, how much disposable income (money not devoted to bills) participants have each month, approximately how often participants gamble, average amount of money lost
or spent a month gambling, average amount of money won a month gambling, perception of average gambling activities (how often people participate in gambling activities, average amount of money lost each month and average amount of money won each month) and Mental Health scores (Depression, Anxiety and Stress).

Inferential statistics were run to check for differences and associations between various variables. A Kruskal Wallis test was used to check for differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers.

The associations and differences between Gender, Employment Status, Age and the Likelihood to Gamble were also investigated. A Chi-square test was used to check for associations between Gender and Likelihood to Gamble. A Chi-square test was also used to check for associations between Employment Status and Likelihood to Gamble. While a Mann-Whitney U was used to check for differences in Age and Likelihood to Gamble.

2.7 Ethics

Permission for the study was granted by Dublin Business School, Psychology Research Ethics Committee and the Code of Professional Ethics outlined were adhered to. In advance of data collection the survey used was given approval by the supervisor before being posted online. Individuals were informed of the nature of the survey and that participation was voluntary. Support service information was provided following participation in the survey.
2.8 Summary

In summary, 155 individuals participated in in a voluntary online survey. Participants were made up of 101 females and 54 males. They ranged in age from 19 to 74 years old with a mean age of 34 years old. Of the individuals surveyed, 87% were currently employed. Permission for the study was granted by Dublin Business School, Psychology Research Ethics Committee and the Code of Professional Ethics were adhered to. Access to the sample was gained through the use of social media, while volunteer, snowball sampling was used. The materials used for this study consisted of a 92 item online survey (see appendix) which was created using Google Forms. The survey measured Age, Gender, Employment Status, Gambling Behaviour, Gambling Perception and Mental Health (Depression, Anxiety and Stress). Descriptive statistics were ran along with inferential statistics which included a Kruskal Wallis test to check for differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers. A Chi-square test was used to check for associations between Gender and Likelihood to Gamble, a second one was also used to check for associations between Employment Status and Likelihood to Gamble. While a Mann-Whitney U was used to check for differences in Age and Likelihood to Gamble.
3. Results

3.1 Introduction

This chapter will give an overview of descriptive statistics. It will also discuss the inferential statistics for both hypotheses, which will investigate differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers, and whether or not Age, Gender or Employment Status play a role in the Likelihood to Gamble.

3.2 Descriptive Statistics

The total of respondents was 155; of these 101 were females, which accounted for 65% of the sample, while there were 54 males. This accounted for the remaining 35% of the sample.

Participants ranged in age from 19 to 74 with a mean age of 34 years old. Nearly 50% of all participants were 30 years of age or younger. Of the 155 participants 135 were in employment. This accounted for 87% of all participants. The remaining 20 were unemployed at the time of participation. This accounted for 13% of the sample.

When participants were asked had they ever gambled, 75% responded by answering ‘yes’, while the remaining 25% answered ‘no’. Participants who had answered “yes” to having ever gambled were asked approximately how much disposable income (money not devoted to bills) they have each month. A total of 116 participants responded to the question, with 35% of individuals reporting having “more than €500” disposable income each month.
When asked approximately how often participants gambled, of those who responded, 23% reported gambling weekly, while 13% reported gambling more frequently. The remaining 64% reported gambling less often.

![Approximately How Often Do You Gamble?](image)

**Figure 3.2.1** frequency table of gambling participation

Gamblers were asked how much money on average they had lost or spent a month. Of the participants who responded, 45% reported spending less than €5.00 a month, 15% of participants reported spending between €5.00 and €10.00. A further 17% of participants reported spending between €10.00 and
€20.00 a month while the remaining 23% of individuals reported spending more than this.

Gamblers were also asked how much money on average they had won a month. Of the participants who responded, 59% reported winning less than €5.00 a month, 14% of participants reported winning between €5.00 and €10.00, while 10% of participants reported winning between €10.00 and €20.00 a month. The remaining 17% of individuals reported winning larger amounts of money.

Finally both gambling and non-gambling participants were asked about their perceptions of average gambling habits. The participants responded by saying 25% believed the average person gambled 2 to 3 times per year, while 12% believed the average person gambled every other month, a further 12% believed the average person gambled once a month, another 20% believed the average person gambled 2 to 3 times per month. The remaining 31% of individuals believed people gambled more or less frequently.

When asked about how much the average person spent on gambling each month, 26% of people believed the average person spent €10.00 to €20.00, while 22% of people believed the average person spent €20.00 to €40.00. Of those surveyed 22% believed they spent less, the remaining 30% of respondents believed they spent more per month.

In answer to a further question, 29% of individuals replied that they believed the average person wins less than €5.00 a month, while 14% believed the average person wins €5.00 to €10.00, another 13% believed the average person wins €10.00 to €20.00 and 16% believed the average person wins
€20.00 to €40.00. The remaining 28% of respondents answered by saying they believed the average person won larger amounts of money.

Participants were asked to complete the Depression, Anxiety and Stress Scale 21 (DASS-21) as a measure of their Mental Health. The results were as followed; the average score for Depression was 8, a normal range is between 0-9, the average score for Anxiety was 7, a normal range for this is 0-7, finally the average score for Stress was 12, while the average range is a score of 0-14 (Lovibond and Lovibond, 1995)

3.3 Inferential Statistics

3.3.1 Hypothesis 1

A Kruskal Wallis test was run to check for differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers. A Kruskal Wallis test was used as normality checks were broken. The checks showed an uneven distribution of the number of participants in each group.

A Kruskal-Wallis one-way ANOVA showed that the Depression scores for Non-Gamblers, Online Gamblers and In-Person Gamblers did not differ significantly ($\chi^2 (2) = 2.74, p = .254$).

A Kruskal-Wallis one-way ANOVA showed that the Anxiety scores for Non-Gamblers, Online Gamblers and In-Person Gamblers did not differ significantly ($\chi^2 (2) = 4.10, p = .131$).
A Kruskal-Wallis one-way ANOVA showed that the Stress scores for Non-Gamblers, Online Gamblers and In-Person Gamblers did not differ significantly ($\chi^2 (2) = 5.10, p = .079$).

These results showed that there was no significant difference in the Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers.

*Figure 3.3.2* results table of Kruskal Wallis Test

<table>
<thead>
<tr>
<th></th>
<th>Stress</th>
<th>Anxiety</th>
<th>Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>5.065</td>
<td>4.068</td>
<td>2.740</td>
</tr>
<tr>
<td>Df</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.079</td>
<td>.131</td>
<td>.254</td>
</tr>
</tbody>
</table>

i. Grouping Variable: Non-Gambler, Online Gambler, In-Person Gambler
3.3.4 Hypothesis 2

This hypothesis investigated the associations and differences between Gender, Employment Status, Age and the Likelihood to Gamble. In order to test this two Chi Squares and a Mann-Whitney U test were run.

A Chi-square test for association found that there was a weak positive significant relationship between the variables Gender and Likelihood to Gamble (X2 (1, N=155) = 5.977, p = .014). Therefore the null hypothesis can be rejected.
It was found that 87% men had gambled, while 69% of women had participated in gambling activities. This shows that men were more likely to have ever gambled than women.

*Figure 3.3.5 showing gender and likelihood to gamble*

A Chi-square test for association found that there was a weak positive significant relationship between the variables Employment Status and Likelihood to Gamble ($X^2$ (1, N=155) = 11.531, $p = .001$). Therefore the null hypothesis can be rejected.
Of those who were currently employed 80% had gambled, while of those who were unemployed 45% reported having gambled. This shows that those in employment were more likely to have ever gambled than who were not.

Figure 3.3.6 showing employment status and likelihood to gamble

A Mann-Whitney U was used to check for differences in Age and Likelihood to Gamble. This test was used as assumptions were not met as there was an uneven distribution in age.
A Mann-Whitney U test revealed that Non-Gamblers (mean rank = 71.95) age and the Gambler (mean rank = 79.97) age did not differ significantly ($z = -0.958$, $p = .338$). This shows that Age did not significantly impact the Likelihood to Gamble.

**Figure 3.3.7 frequency table showing distribution of age**

**Figure 3.3.8 results table of Mann-Whitney U test**

<table>
<thead>
<tr>
<th>Have you ever gambled?</th>
<th>N</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>38</td>
<td>71.95</td>
</tr>
<tr>
<td>Yes</td>
<td>117</td>
<td>79.97</td>
</tr>
<tr>
<td>Total</td>
<td>155</td>
<td></td>
</tr>
</tbody>
</table>
Summary 3.4

In summary, these statistical tests found that; 65% of the respondents were female and 35% were men. The average age of participants was 34 years old, while 87% of all participants were in employment. A high number of participants had gambled with 75% answering ‘yes’. Of those who had gambled 35% reported having “more than €500” disposable income each month, with 23% reporting gambling weekly. On average 45% reported spending less than €5.00 a month on gambling, while 59% reported winning less than €5.00 a month. Both gamblers and non-gamblers responded saying 25% believed the average person gambled 2 to 3 times per year. When asked about how much the average person spent on gambling each month, 26% of people believed the average person spent €10.00 to €20.00, while 29% of individuals replied that they believed the average person wins less than €5.00 a month. The average result of the DASS-21 for Depression, Anxiety and Stress all fell within normal range.

The quantitative tests also showed that there was no significant difference in the Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers.

It was shown that there was an association between Gender and the Likelihood to Gamble, with men being more likely to do so. It was also shown that there was an association between Employment Status and Likelihood to Gamble, with those in employment were more likely to have ever gambled than who were not. However, Age did not significantly impact the Likelihood to Gamble.
4. Discussion

The aim of the present research was to investigate whether there would be a difference in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, In-Person Gamblers and Online Gamblers. It was also investigated as to whether or not Gender, Employment Status and Age would impact the Likelihood to Gamble.

4.1 Interpretation of findings

4.1.1 Hypothesis 1

A Kruskal Wallis test was run to investigate differences in Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers. It was found that there was no significant difference in the Mental Health (Depression, Anxiety and Stress scores) between Non-Gamblers, Online Gamblers and In-Person Gamblers.

These findings were not in line with a large body of previous research. As noted above mood disorders, including bipolar disorders and major depressive affective disorders, personality disorders and anxiety disorders are most often comorbid with pathological gambling (Chou et al; Kim et al; as cited by Rodriguez-Monguio et al, 2017 p.406). While Shaffer and Korn (2002) note anxiety as a hallmark trait in gamblers seeking treatment (p.193) and Reith et al note that roughly 60% of individuals with gambling problems indicated that they had experienced depression as a result of gambling
behaviours. (Australian Productivity Commission, as cited by Reith et al 2006 p.43). Those classed as pathological gamblers have also been found to have elevated stress levels which are not limited to the time of gambling participation. Gamblers may experience increased levels of debt and urgency, which may create conditions of chronic stress (Natelson, as cited by Fong 2005 p.25). Hypothesis 1 was not met and may be rejected.

4.1.2 Hypothesis 2

Two Chi Squares and a Mann-Whitney U test were run. The first Chi-square test found that there was a significant relationship between Gender and Likelihood to Gamble. Of the 155 participants 65% were female, while the remaining 35% was male. It was found that 87% men had gambled, while 69% of women had gambled in comparison. This was consistent with previous findings by the U.K. Gambling Commission Annual Report (2017) which found that men were more likely to gamble than women, with 53% of men reporting gambling, while 44% of women reporting participating in gambling.

The second Chi-square found that there was a significant relationship between Employment Status and Likelihood to Gamble. Of those who were surveyed 87% were in employment while the remaining 13% were unemployed at the time of participation. It was found that of those who were currently employed 80% had gambled, while 45% of those who were unemployed reported having gambled. This was in line with previous research which reported that those who were in employment or training were more likely to have gambled, with 69% having spent money on gambling while
those who were unemployed, retired or economically inactive, gambling participation was between 55% and 57% (Conolly 2017 p.18).

Lastly participants ranged in age from 19-74 with a mean age of 34 years old. A Mann-Whitney U test was run to check for differences in Age between Non-Gamblers and Gamblers. The results showed that Age did not differ significantly between both groups. This was not consistent with previous research and findings. The U.K. Gambling Commission Annual Report (2017) found that those who participated in gambling were more likely to be between 35 and 64 years old. Hypothesis 2 was partially met, with the relationship between Gender and Likelihood to Gamble and relationship between Employment Status and Likelihood to Gamble may be retained while differences in Age between Non-Gamblers and Gamblers may be rejected.

4.2 Limitations

4.2.1 Hypothesis 1

Although the finding for the first hypothesis was not significant, it must be noted that most studies regarding gambling and mental health are focused on pathological and/or problem gamblers. In this study, those who were surveyed were not pathological or problem gamblers, with only 1% of participants gambling ‘every day’, 6% gambling ‘every other day’ and 2% of participants spending or losing an average of ‘€500 to €1000’ a month. As such, it may be inferred that non-problem or recreational gambling does not have an adverse effect on mental health, although this is in contradiction with a study by Cunningham-Williams et al (1998) which found that even
recreational gamblers were more prone to meet psychiatric criteria than non-gamblers (p.1095). More research would need to be conducted, with a larger sample, to further investigate and as such possibly validate or disregard these results.

4.2.2 Hypothesis 2

The second hypothesis showed that men were more likely to gamble than women. There was a difference of 18% in the likelihood to gamble for men and women while the U.K. Gambling Commission Annual Report (2017) showed a difference of 9% for men and women. Although the findings reported were in line with previous studies, a larger number of both men and women reported gambling and there was a bigger margin of difference, this may be due to the relatively small sample size in comparison to previous national studies.

It was also found that those in employment were more likely to gamble than those who were unemployed. Again although consistent, margin of difference larger, possibly due to sample. 13% reported unemployment, not representative of Ireland currently unemployment status was reported at 6.3% for August 2017 (Central Statistics Office)

Lastly it was found that there was no significant difference in age for those who gambled and those who did not. However, the U.K. Gambling Commission Annual Report (2017) also noted that when participants of the national lottery (the most popular activity) were excluded, the age range changed from 35 and 64 years old to 25 to 34 years old and 16 to 24 years old for those who were more likely to gamble. The current study did not adjust for this, as such findings may have differed, had this been done.
4.3 Further research

There is only a small amount of previous studies which look at recreational gambling or non-problem gambling and its impact on mental health, the current study may add to this area of little research. It is also difficult to source up to date facts and figures for Irish gambling trends, this study attempts to begin to fill that gap. The current study questions previous findings, while some results were non-significant, others showed a bigger margin of difference for those that were significant. It would be interesting and worthwhile to investigate the association between demographic factors, mental health and gambling behaviour further, specifically focusing on the impact of recreational gambling on mental health on a larger scale as this is an area of little research.

4.4 Conclusion

In conclusion, it was found that that there was no significant difference in the Mental Health (Depression, Anxiety and Stress) between Non-Gamblers, Online Gamblers and In-Person Gamblers. It was found that there was an association between Gender and the Likelihood to Gamble, with men being more likely to gamble. It was also found that there was an association between Employment Status and Likelihood to Gamble, with those in employment were more likely to gamble than who were unemployed. However, Age did not significantly impact the Likelihood to Gamble. As noted above, further research would need to be conducted to further investigate these findings.


Gainsbury et al (2011) An investigation of internet gambling in Australia, Southern Cross University, Centre for Gambling Education and Research, Southern Cross University, Lismore, NSW, Retrieved March 2018 from ePublications@SCU


Appendix

1. Copy of 92 Item Online Gambling and Mental Health Survey used

Section 1

My name is Catherine Bregazzi and I am conducting research in the Department of Psychology that explores Gambling and Mental Health. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study by completing the following survey. The survey asks some questions that could cause some minor negative feelings, it has been used widely in previous research. If any questions or the topic raise difficult feelings for you, contact information for support services are included at the end of the survey.

Participation is completely voluntary and so you are not obliged in any way to take part.

Participation is anonymous and confidential. Responses cannot be attributed to any one participant. Data from the questionnaires will be stored on a password protected computer.

If you require any further information about the research, please contact Catherine Bregazzi, x********@mydbs.ie
Or my supervisor, Sonam Prakashini Banka, x********@dbs.ie

Thank you for your participation.

*Please note that by completing and submitting the questionnaire that you are consenting to participate in the study.
Section 2

1. Are you male or female?
   - Male
   - Female

2. What age are you?
   (insert age in numbers)

3. Are you currently employed?
   - Yes
   - No

4. Have you ever gambled?
   - Yes
   - No

*if you answered no to the last question skip to section 5
Section 3

We’d like you to think about gambling activities; by gambling we mean spending money on games of chance where you can win money or money’s worth. We are not talking about free to play games or games where you cannot win a real prize. In the past four weeks, have you spent money on any of the following:

<table>
<thead>
<tr>
<th>Activity</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tickets for the National Lottery draws (Lotto, EuroMillions, Thunderball, Hotpicks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scratchcards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tickets for a charity lottery or other lottery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruit or slot machines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual gaming machines in a bookmaker’s to bet on virtual roulette, poker, blackjack or other games</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bingo, including bingo played online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The football pools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on horse races</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on dog races</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on Football</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on Tennis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on other sports events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on other events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on virtual dog or horse races</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spread betting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online instant win games available on the National Lottery website</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online fruit/slot machine style games or online instant win games</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roulette, cards or dice in a casino or online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poker in a casino or online</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing poker in a pub tournament/league, or at a club</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private betting (sweepstakes, bets) or gambling (playing card games for money) with friends, family or colleagues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Another form of gambling activity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the past four weeks how have you spent money on these activities? By online we mean via the internet, mobile browser or app or via a Smart TV.

<table>
<thead>
<tr>
<th>Activity</th>
<th>online</th>
<th>In-person</th>
<th>both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tickets for the National Lottery draws (Lotto, EuroMillions, Thunderball, Hotpicks)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tickets for a charity lottery or other lottery (e.g. the Health Lottery, Postcode Lottery)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bingo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Football pools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on horse races</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on dog races</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Betting on Football</td>
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<td></td>
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<tr>
<td>Betting on Tennis</td>
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<td></td>
<td></td>
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<tr>
<td>Betting on other sports events</td>
<td></td>
<td></td>
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<tr>
<td>Betting on other events</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Betting on virtual dog or horse races</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spread betting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roulette, cards or dice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Another form of gambling activity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How often do you spend money on each of the following activities online?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Everyday</th>
<th>2+ days a week</th>
<th>Once a week</th>
<th>At least once a month</th>
<th>Less than once a month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tickets for the National Lottery draws (Lotto, EuroMillions, Thunderball, Hotpicks)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tickets for a charity lottery or other lottery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bingo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The football pools</td>
<td></td>
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<td>Betting on horse races</td>
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<td>Betting on dog races</td>
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<tr>
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<td>Betting on Tennis</td>
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<td>Betting on other sports events</td>
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<td>Betting on other events</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Betting on virtual dog or horse races</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spread betting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online instant win games available on the National Lottery website</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online fruit/slot machine style games or online instant win games</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roulette, cards or dice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Another form of gambling activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 4

1. Approximately how much spending money (not devoted to bills) do you have each month?
   
   - Less than €50
   - €50 to €100
   - €100 to €150
   - €150 to €200
   - €200 to €250
   - €250 to €300
   - €300 to €350
   - €350 to €400
   - €400 to €450
   - €450 to €500
   - More than €500

2. Approximately how often do you gamble?

   - Never
   - Once a year
   - 2–3 times per year
   - Every other month
   - Once a month
   - 2–3 times per month
   - Weekly
   - More than once per week
   - Every other day
   - Every Day
3. How often do you think the average person gambles?

   Never
   Once a year
   2–3 times per year
   Every other month
   Once a month
   2–3 times per month
   Weekly
   More than once per week
   Every other day
   Every Day

4. Approximately how much money have you spent (lost) gambling in the PAST YEAR?

   Less than €25
   €25 to €50
   €50 to €100
   €100 to €200
   €200 to €300
   €300 to €500
   €500 to €700
   €700 to €1000
   €1000 to €2000
   More than €2000
5. Approximately how much money have you spent (lost) gambling in the PAST MONTH?

Less than €5
€5 to €10
€10 to €20
€20 to €40
€40 to €60
€60 to €100
€100 to €200
€200 to €500
€500 to €1000
More

6. On average how much money do you spend (lose) gambling PER MONTH?

Less than €5
€5 to €10
€10 to €20
€20 to €40
€40 to €60
€60 to €100
€100 to €200
€200 to €500
€500 to €1000
More
7. Approximately how much money have you won gambling in the PAST YEAR?

- Less than €25
- €25 to €50
- €50 to €100
- €100 to €200
- €200 to €300
- €300 to €500
- €500 to €700
- €700 to €1000
- €1000 to €2000
- More than €2000

8. Approximately how much money have you won gambling in the PAST MONTH?

- Less than €5
- €5 to €10
- €10 to €20
- €20 to €40
- €40 to €60
- €60 to €100
- €100 to €200
- €200 to €500
- €500 to €1000
- More
9. On average how much money do you win gambling *PER MONTH*?

Less than €5

€5 to €10

€10 to €20

€20 to €40

€40 to €60

€60 to €100

€100 to €200

€200 to €500

€500 to €1000

More
Section 5

1. How much money do you think the average person spends (loses) gambling \textit{PER YEAR}?

- Less than €25
- €25 to €50
- €50 to €100
- €100 to €200
- €200 to €300
- €300 to €500
- €500 to €700
- €700 to €1000
- €1000 to €2000
- More than €2000

2. How much money do you think the average person spends (loses) gambling \textit{PER MONTH}?

- Less than €5
- €5 to €10
- €10 to €20
- €20 to €40
- €40 to €60
- €60 to €100
- €100 to €200
- €200 to €500
- €500 to €1000
- More
3. How much money do you think the average person wins gambling PER YEAR?
   - Less than €25
   - €25 to €50
   - €50 to €100
   - €100 to €200
   - €200 to €300
   - €300 to €500
   - €500 to €700
   - €700 to €1000
   - €1000 to €2000
   - More than €2000

4. How much money do you think the average person wins gambling PER MONTH?
   - Less than €5
   - €5 to €10
   - €10 to €20
   - €20 to €40
   - €40 to €60
   - €60 to €100
   - €100 to €200
   - €200 to €500
   - €500 to €1000
   - More
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

*The rating scale is as follows:*

0  Did not apply to me at all  
1  Applied to me to some degree, or some of the time  
2  Applied to me to a considerable degree, or a good part of time  
3  Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I couldn’t seem to experience any positive feeling at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
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<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of myself</td>
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<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
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<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td></td>
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<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
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<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I was doing</td>
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<tr>
<td>15</td>
<td>I felt I was close to panic</td>
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<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
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<tr>
<td>17</td>
<td>I felt I wasn’t worth much as a person</td>
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<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
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<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)</td>
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<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td></td>
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</tr>
</tbody>
</table>
Thank you for participating in the survey.
If you have been affected by any of the issues raised please note the support services below:

http://www.rutlandcentre.ie
http://www.gambleaware.ie
http://www.samaritans.org
http://www.aware.ie

2. DASS-21 Scoring sheet
3. DASS-21 Scoring Instructions

The DASS-21 should not be used to replace a face to face clinical interview. If you are experiencing significant emotional difficulties you should contact your GP for a referral to a qualified professional.

The Depression, Anxiety and Stress Scale - 21 Items (DASS-21) is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress.

Each of the three DASS-21 scales contains 7 items, divided into subscales with similar content. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic nonspecific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 development was based (and which was confirmed by the research data) is that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially differences of degree. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the DSM and ICD.

Recommended cut-off scores for conventional severity labels (normal, moderate, severe) are as follows:
NB Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score.

<table>
<thead>
<tr>
<th></th>
<th>Depression</th>
<th>Anxiety</th>
<th>Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>0-9</td>
<td>0-7</td>
<td>0-14</td>
</tr>
<tr>
<td>Mild</td>
<td>10-13</td>
<td>8-9</td>
<td>15-18</td>
</tr>
<tr>
<td>Moderate</td>
<td>14-20</td>
<td>10-14</td>
<td>19-25</td>
</tr>
<tr>
<td>Severe</td>
<td>21-27</td>
<td>15-19</td>
<td>26-33</td>
</tr>
<tr>
<td>Extremely Severe</td>
<td>28+</td>
<td>20+</td>
<td>34+</td>
</tr>
</tbody>
</table>