Gender Differences in Treatment-Seeking British Pathological Gamblers

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Background and aim: Gambling is a widespread recreational activity in the UK. A significant percentage of gamblers develop subclinical or clinically relevant problem gambling issues, but only a low percentage of them seek treatment. Although characteristics of pathological gamblers from treatment-seeking population have been examined in some research, only a few studies have explored the differences between females and males. This study aimed to examine the gender-related differences in demographics, gambling measures, and clinical variables in an outpatient sample of pathological gamblers seeking treatment. *Methods:* A total of 1,178 treatment-seeking individuals with gambling disorder were assessed at the National Problem Gambling Clinic in London. Sociodemographic characteristics, clinical variables, and gambling behavior habits were obtained during the assessment evaluation. Of the total sample, 92.5% were males and 7.5% were females. *Results:* Males were more likely to be younger, white, and employed than females. In addition, compared to women, men showed a lower PGSI score, an earlier age of onset of gambling behavior, a higher gambling involvement, and preferred specific forms gambling. Female gamblers were more anxious and depressed, while men were more likely to use alcohol and illicit drugs. *Conclusions:* Our findings support the importance of gender differences in a treatment-seeking population of pathological gamblers both in socio-demographic characteristics, gambling behavior variables, and clinical variables. Males and females might benefit from group-specific treatment.

Keywords: gambling disorder, pathological gambling, treatment seeking, gender differences

INTRODUCTION

Gambling is a widespread recreational activity in the UK, with the 2010 British Gambling Prevalence Survey reporting that 75% of males and 71% of females had gambled in the previous year (Wardle et al., 2010). Although most individuals gamble recreationally and do not develop gambling-related problems, a smaller, but significant percentage of gamblers develop problem gambling issues. It has been estimated that gambling disorder (GD) has a prevalence rate that ranged between 0.3% and 5.3% of the general population worldwide, with an estimated rate of 0.7–0.9 in the UK according to the criteria set by the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (Wardle et al., 2010). GD is characterized by maladaptive patterns of gambling behavior with a natural history characterized by chronicity and recurrence. Although GD was traditionally classified as an impulse-control disorder, the DSM-5 reclassified it into the "addiction and related disorders" category, underlining multiple similarities with substance use disorders (American Psychiatric Association, 2013).

Gender differences in problem gamblers among the general population have been increasingly explored. Prevalence rates of GD among females were found to be less than half, when compared to males (Blanco, Hasin, Petry, Stinson, & Grant, 2006); however, figures on female problematic gambling are currently increasing as changes in the gambling market, i.e., the availability of online, more "tailored," games, and in the cultural framework, are contributing to increasing female gambling participation (Griffiths, Wardle, Orford, Sproston, & Erens, 2009; LaPlante, Nelson, LaBrie, & Shaffer, 2006). Female gamblers had a later initiation of problematic gambling, and a two-fold faster development of GD (Nelson, LaPlante, LaBrie, & Shaffer, 2006; Tavares, Zilberman, Beites, & Gentil, 2001). Moreover, women were found to have a preference for pure chance, "non-strategic" types of gambling (Potenza et al., 2001). When examining psychopathological correlates of GD, it was found that associations between GD and substance abuse, major depressive episodes, and generalized anxiety disorder were stronger among women (Petry, Stinson, & Grant, 2005).

Although characteristics of pathological gamblers from the general population have been examined on a satisfactory sample, a few studies, to our knowledge, have examined the treatment-seeking population, reporting significant intergender differences. Among the difficulties of studying this population are the relatively low percentage of individuals who seek treatment for GD, 9.9% according to one study (Slutske, 2006), and the high rate of dropouts

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(Melville, Casey, & Kavanagh, 2007). A consistently reported result was that women were older in age, and had initiated problematic gambling behavior at an older age than men (Echeburúa, González-Ortega, de Corral, & Polo-López, 2011; Granero et al., 2009; Tang, Wu, & Tang, 2007). Men, in turn, reported more debt and more money spent on gambling (Granero et al., 2009; Lahti, Halme, Pankakoski, Sinclair, & Alho, 2013) as well as more relational difficulties due to gambling (Granero et al., 2009).

The psychopathological profile of women was found to be poorer than that of males, with higher scores for depression and anxiety; moreover, women were more likely to report the use of gambling to regulate negative affect (Granero et al., 2009). Due to the scarcity of data on this specific population, and the absence of treatment-seeking related data in the UK, we aimed to explore sociodemographic, gambling, and clinical correlates of GD, with a particular attention to gender differences, in a British sample of treatment-seeking pathological gamblers.

METHODS

Participants

Data were collected from clients who were voluntarily seeking treatment at the National Problem Gambling Clinic (NPGC) between January 2011 and December 2013. Over the course of the present study, we received 1,741 referral forms. From this initial sample, there were a number of clients excluded from the study because of not attending or not completing assessments ($n = 563$). The final sample therefore consisted of 1,178 clients.

Procedure

The NPGC is the first and only National Health Service clinic in the UK that provides treatment for pathological gamblers. Cognitive behavioral therapy is the main type of treatment offered, and is delivered in three different ways; in a group setting, individually, and remotely over the phone for those who are unable to travel weekly to the clinic. On their first visit, clients are assessed thoroughly to gain information about the clients' gambling behavior and related information, including clinical variables (e.g., patient health questionnaire and generalized anxiety disorder). Sociodemographic variables were obtained from the referral form in which each client is required to fill in prior to assessment. During the assessment, clients were informed that information collected from the referral and assessment forms would be analyzed by researchers to increase the understanding about GD. Oral consent was obtained from clients before filling in the assessment form.

Measures

Clinical interview. During the interview, clients were asked to describe their gambling behavior (type of gambling, frequency, money spent, age noted gambling became problematic, history of gambling behavior, debts, total amount lost on gambling, and previous treatment) psychiatric, medical and forensic histories, family psychiatric history, family structure, and impact of gambling on family and personal histories.

Assessment forms

Self-administered questionnaires
- Problem Gambling Severity Index (PGSI). Validated by a number of studies (Holtgraves, 2009), the PGSI is a nine-item questionnaire, which measures gambling severity. It consists of four questions that assess problematic gambling behavior and five questions that assess adverse consequences of gambling. The score that can be obtained from the PGSI ranges from 0 to 27. A score of 8 and above indicates a "problem" gambler (Ferris & Wynne, 2001).
- Patient Health Questionnaire (PHQ-9). The PHQ-9 is a nine-item instrument, which is widely used to measure the severity of depression. The questionnaire evaluates each of the nine DMS-IV criteria for depression (Kroenke, Spitzer, & Williams, 2001). Scores of 5, 10, 15, and 20 are used as the cutoff points for mild, moderate, moderately severe, and severe depression. The PHQ-9 has been commended for its high sensitivity and specificity for diagnosing depression, good internal consistency, convergent and discriminant validity, robustness of factor structure, and responsiveness to change (Kroenke, Spitzer, Williams, & Löwe, 2010).
- Generalized Anxiety Disorder (GAD-7). The widely used seven-item GAD-7 measures anxiety over the previous two weeks. Scores range from 0 to 27; Scores of 5, 10, and 15 are taken as the cutoff points for mild, moderate, and severe anxiety (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007). The GAD-7 has been credited with having good convergent validity with other measures of anxiety (Kroenke et al., 2010) and described as having good sensitivity and specificity for GAD-7 (Spitzer, Kroenke, Williams, & Löwe, 2006).
- Alcohol Use Disorders Identification Test-Consumption Questions (AUDIT-C). The AUDIT-C consists of three questions, two of which assess regular drinking in terms of frequency and quantity, the third assessing binge drinking, which is defined as six or more alcoholic drinks in one sitting, at least once a month in the preceding three months (Bush, Kivlahan, McDonell, Fihn, & Bradley, 1998). Answers are ranked from 0 to 4, and the final score is the sum of each question. A score of 5 or more indicates hazardous drinking. The AUDIT-C is a validated and well-established screening tool (Meneses-Gaya et al., 2010).
- Tobacco behavior. All subjects were questioned about their tobacco use [frequency (i.e., daily) and amount, i.e., 20].
- Drug use. To determine other drug use, we administered a specific questionnaire that asked about individual drugs (marijuana, cocaine, crack cocaine, opiates, opiate substitutes, and ecstasy). For each drug, we assessed lifetime use, current use, and number of days in the past month in which the drug was used.
- Type of gambling. To determine the gambling behavior, we administered a specific questionnaire

evaluating the specific forms of gambling in which the client was involved. For each type of gambling activity, we asked if the client had ever practiced it, if she had gambled on it in the past year and in the last 30 days, the number of gambling days in the past 30 days and the total time spent per typical day. The specific forms of gambling we inquired about were lottery or scratch cards, internet gambling on computer or mobile phone, and interactive TV or telephone; betting sports at bookmaker or sports events, gaming machines, Fixed Odd Betting Terminal (FOBT), casino table games, bingo, and other forms of gambling.

Statistical analysis

Analysis was carried out using SPSS version 20.0 for Windows. All the hypothesis tests were performed using two-sided significance level ($\alpha = 0.05$). First, differences between the genders were tested for the significance with chi-square and Fisher's exact testing for categorical variables, and two-tailed t-test for continuous variables, and we calculated the odd ratio for significant variables. For continuous variables, we also used a non-parametric alternative to the t-test (Mann–Whitney U) as a control test, which is usually used when there was a reason to believe that data were not normally distributed. Since the results were identical, we have only reported the t-test results. Finally, variables were entered into a logistic regression to determine whether gender was related to categorical- and continuous-independent variables, using Nagelkerke's R^2 (Nagelkerke, 1991). Since the previous research in this field is limited, we used stepwise methods to include all variables in the analysis as predictors, independently from the significance

shown at bivariate level. We used gender as dependent variable.

Ethics

Ethical approval was not needed as the collected data were a part of the clinic's standard battery of assessment forms.

RESULTS

Sociodemographic characteristics

Of the 1,178 pathological gamblers assessed, 1,090 (92.5%) were males and 88 (7.5%) were females. The subjects were adults (18 years or older) with an average age of 36 years old. Most of the subjects were white (74.8%), single (53.7%), had at least a secondary educational degree (77.8%), and were employed (66.6%). Males were younger than females (average age of 35 versus 41, $p < .001$) and were more likely to be white ($p = .016$; OR = 1.75, 95% CI: 1.11; 2.79) and employed ($p < .001$; OR = 2.06, 95% CI: 1.32; 3.23) (Table 1).

Gambling behavior

In terms of GD severity, there were significant differences in PGSI scores between males and females (average 19.67 versus 21.61, $p = .001$). Furthermore, men presented earlier onset of gambling than women (average 22.97 versus 30.68, $p < .001$), and longer duration of GD before contacting the clinic (mean 12.23 versus 9.52, $p = .048$). Information about the type of gambling activity over the last year was available

Table 1. Sociodemographic characteristics of the sample by gender ($n = 1,178$)

Variable	Male ($n = 1,090$) N (%)	Female ($n = 88$) N (%)	Total ($n = 1,178$) N (%)	OR (CI 95%)	
Age					
Mean (SD)	35.34 (10.72)	41.09 (9.95)	35.77		$t = -4.839$ ($p < .001$)
Ethnicity					
White	791 (75.7%)	55 (64.0%)	846 (74.8%)	1.75 (1.11; 2.79)	$X^2 = 5.811$
Not white	254 (24.3%)	31 (36.0%)	285 (25.2%)	1.00	($p = .016$)
Marital status					
Married or cohabitant	385 (38.2%)	25 (32.0%)	410 (37.7%)		$X^2 = 7.259$
Divorced or separated	79 (7.8%)	11 (14.1%)	90 (8.3%)		($p = .064$)
Widowed	2 (0.2%)	1 (1.3%)	3 (0.3%)		
Single	543 (53.8%)	41 (52.6%)	584 (53.7%)		
Employment					
Employed	718 (67.9%)	42 (50.6%)	760 (66.6%)	2.06 (1.32; 3.23)	$X^2 = 41.957$
Unemployed	117 (16.7%)	10 (12.1%)	187 (16.4%)	1.00	($p < 0.001$)
Student	39 (3.7%)	1 (1.2%)	40 (3.5%)		
Retired	16 (1.5%)	2 (2.4%)	18 (1.6%)		
Other	108 (10.2%)	28 (33.7%)	136 (11.9%)		
Educational level					
None	141 (15.6%)	7 (10.3%)	148 (15.2%)		$X^2 = 8.701$
CGSE or equivalent	429 (47.3%)	35 (51.5%)	464 (47.6%)		($p = .034$)
Degree or more	278 (30.7%)	16 (23.5%)	294 (30.2%)		
Other	58 (6.4%)	10 (14.7%)	68 (7.0%)		

for 1087 patients. The most popular gambling activities in the year prior to the assessment were lottery/scratch cards (77.9%), betting at bookmakers or at sports events (65.8%) and FOBT gambling (64.8%). Data about the type of gambling in the past month were available for 903 subjects. The most popular gambling activities in the 30 days prior to assessment were lottery and scratch cards (56.4%) FOBT gambling (52.0%) and betting at bookmakers or at sports events (47.4%). There were significant sex differences: males were more likely to be involved in casino table games ($p = .002$, OR = 2.30, 95% CI: 1.35; 3.91), FOBT ($p < .001$, OR = 4.97, 95% CI: 3.00; 8.22), sports betting ($p < .001$, OR = 15.77, 95% CI: 8.01; 31.04), and other forms of gambling ($p = .004$, OR = 6.28, 95% CI: 1.52; 25.83), while women were more likely to play bingo ($p < .001$, OR = 0.13, 95% CI: 0.08; 0.23). The analysis of the gambling behavior in the 30 days prior to assessment confirmed one-year results for FOBT ($p < .001$, OR = 3.40, 95% CI: 1.93; 6.00), sports betting ($p < .001$, OR = 10.17, 95% CI: 4.35; 23.79), and bingo ($p < .001$, OR = 0.12, 95% CI: 0.05; 0.28). Furthermore, males were more likely to be involved in multiple types of gambling both in last-year data (average 3.93 versus 3.01; $p < .001$) and in data from the last 30 days (average 2.59 versus 2.13; $p = .002$), as reported in Table 2.

Clinical variables

Female gamblers were more anxious and depressed with a higher mean score in GAD-7 (12.64 versus 10.10, $p < .001$) and PHQ-9 scales (16.63 versus 12.56, $p < .001$), while men had a higher mean score in the AUDIT-C scale (4.78 versus 3.41, $p < .001$). Furthermore, men were more likely to use drugs ($p < .007$, OR = 3.75, 95% CI: 1.35; 10.40) and alcohol ($p < .001$, OR = 2.35, 95% CI: 1.45; 3.81) in the 30 days prior to assessment. No significant gender-related differences were found in smoking behavior (Table 3).

Logistic regression analysis

Variables with significant gender results ($p < 0.01$) were considered together in a multivariate analysis; the most salient correlates of gender were: male are more likely to be engage in FOBT ($p < .001$, AOR 0.09, 95% CI: 0.03; 0.34) and sports betting gambling ($p = 0.011$, AOR 0.06, 95% CI: 0.01; 0.55), while women are more likely to be older ($p = .001$, AOR 1.08, 95% CI: 1.03; 1.13), report an higher PHQ-9 score ($p = .004$, AOR 1.12, 95% CI: 1.04; 1.21), and to engage in bingo ($p = .006$, AOR 113.71, 95% CI: 3.94; 3,284.83) (Table 4).

DISCUSSION

The present study aimed to examine sociodemographic, gambling-related, and clinical variables in a treatment-seeking sample of pathological gamblers as well as to analyze gender-related characteristics. The data suggest relevant differences between male and female treatment-seeking gamblers.

Our sociodemographic findings were partially in accordance with the few similar studies in the literature as the majority of the treatment seekers had at least a secondary

degree, were employed, and belonged to the country's ethnic majority (Braun, Ludwig, Sleczka, Bühringer, & Kraus, 2014; Volberg, 1994). There were mixed findings as to how marital status influences the odds of attending treatment (Braun et al., 2014; Granero et al., 2009; Weinstock, Burton, & Rash, 2011), with one similar study finding that female gamblers were more likely to be divorced/widowed (Echeburúa et al., 2011). These results might be partially explained by the fact that, as shown by Evans and Delfabbro (2005), the primary motivations of help seeking among problem gamblers were crisis driven, and therefore the loss of a relationship, or a job, would be a motivator for seeking professional help. However, in the present study, a majority of male and female subjects were employed, as was the case in one of the previous study (Lahti et al., 2013), and more than half of male and female subjects were never married, and not currently in a relationship. We can also hypothesize that differing levels of availability and perception of professional help seeking for problematic gambling might influence treatment-seeking rates, regardless of family status. In keeping with previous findings (Echeburúa et al., 2011), a significant difference in age between male and female participants was found in our sample as treatment-seeking females were significantly older than their male counterparts.

Another important result in the present study was that males were more likely than females to be employed, and to belong to the majority ethnic group. To our knowledge, this is the first such finding on a large sample. Although many research studies have shown that GD prevalence is higher among minority ethnicity groups; only a small percentage from this group has sought help from the clinic (25.2%). Females from ethnic minorities are more likely to seek treatment compared to men (36.0% versus 24.3%), confirming that they may be a particular group at risk of developing GD.

Together, these findings support other studies and highlight the need to make the clinic services more available or attractive to minority groups. Language difficulties and cultural barriers could negatively impact on treatment entry and utilization among a non-British population (Braun et al., 2014; Potenza et al., 2001). Lower socioeconomic class and an ethnic minority status have already been recognized as probable obstacles to treatment access (Braun et al., 2014; Weinstock et al., 2011); although the results in the present study must be interpreted with caution, as neither employment status nor ethnicity can be considered as a direct measure of the socioeconomic status, they might suggest that the negative effects of socioeconomic vulnerability factors on treatment access can be even greater on women.

In relation to gambling behavior variables, and unlike previous studies (Echeburúa et al., 2011; Lahti et al., 2013), we found that women had higher gambling severity scores. This difference was statistically significant, although small, when considering the effect size. One possible explanation could be that the increased gambling severity among treatment-seeking women may reflect the fact that women are less likely than men to seek treatment, and therefore the severity of the cases that reach clinical attention might be higher. Another possible explanation is the fact that, in the

Table 2. Comparison of gambling behavior by sex

Variable		Male	Female	OR (CI 95%)	
Problem Gambling Severity Index mean (SD)		19.67 (5.07)	21.61 (4.80)		$t = -3.345$ ($p = .001$)
Age of onset (years) mean (SD)		22.97 (9.07)	30.68 (11.98)		$t = -4.996$ ($p < .001$)
Duration of GD (years) mean (SD)		12.23 (10.53)	9.52 (8.43)		$t = 1.977$ ($p < .048$)
Lottery or scratch cards	Last year Yes N (%)	783 (77.6%)	64 (82.1%)		$X^2 = 0.833$ ($p = .361$)
	Past 30 days Yes N (%)	469 (56.0%)	40 (60.6%)		$X^2 = 0.520$ ($p = .471$)
Internet on computer/ mobile phone, interactive TV or telephone	Last year Yes N (%)	627 (62.1%)	45 (57.7%)		$X^2 = 0.607$ ($p = .436$)
	Past 30 days Yes N (%)	315 (37.6%)	31 (47.0%)		$X^2 = 2.256$ ($p = .133$)
Casino table games	Last year Yes N (%)	429 (42.5%)	19 (24.4)	2.30 (1.35; 3.91)	$X^2 = 9.853$ ($p = .002$)
	Past 30 days Yes N (%)	145 (17.3%)	7 (10.6%)		$X^2 = 1.972$ ($p = .160$)
Gaming machine	Last year Yes N (%)	536 (53.1%)	48 (61.5%)		$X^2 = 2.063$ ($p = .151$)
	Past 30 days Yes N (%)	295 (35.2%)	29 (43.9%)		$X^2 = 2.010$ ($p = .156$)
FOBT	Last year Yes N (%)	681 (67.5%)	23 (29.5%)	4.97 (3.00; 8.22)	$X^2 = 45.828$ ($p < .001$)
	Past 30 days Yes N (%)	453 (54.1%)	17 (25.8%)	3.40 (1.93; 6.00)	$X^2 = 19.720$ ($p < .001$)
Sports at bookmaker or sports event	Last year Yes N (%)	705 (69.9%)	10 (12.8%)	15.77 (8.01; 31.04)	$X^2 = 104.686$ ($p < .001$)
	Past 30 days Yes N (%)	422 (50.4%)	6 (9.1%)	10.17 (4.35; 23.79)	$X^2 = 41.908$ ($p < .001$)
Bingo	Last year Yes N (%)	57 (5.6%)	24 (30.8%)	0.13 (0.08; 0.23)	$X^2 = 66.248$ ($p < .001$)
	Past 30 days Yes N (%)	15 (1.8%)	9 (13.6%)	0.12 (0.05; 0.28)	$X^2 = 33.172$ ($p < .001$)
Others	Last year Yes N (%)	143 (14.2%)	2 (2.6%)	6.28 (1.52; 25.83)	$X^2 = 8.440$ ($p = .004$)
	Past 30 days Yes N (%)	53 (6.3%)	2 (3.0%)		$X^2 = 1.166$ ($p = .280$)
Involvement mean (SD) (number of different gambling activities played)	Last year	3.92 (1.52)	3.01 (1.20)		$t = 6.330$ ($p < .001$)
	Past 30 days	2.58 (1.36)	2.13 (1.09)		$t = 3.173$ ($p < .002$)

Note. FOBT = Fixed Odd Betting Terminal.

Table 3. Comparison of clinical variables by sex

Variable		Male	Female	OR (CI 95%)	
Patient Health Questionnaire score mean (SD)		12.56 (7.12)	16.63 (7.19)		$t = -4.941$ ($p < .001$)
Generalized Anxiety Disorder score mean (SD)		10.10 (6.11)	12.64 (6.12)		$t = -3.609$ ($p < .001$)
Alcohol Use Disorders Identification Test consumption score mean (SD)		4.78 (2.87)	3.41 (2.83)		$t = 4.091$ ($p < .001$)
Use of drugs in pre-assessment month	Yes N (%)	171 (17.0%)	4 (5.2%)	3.75 (1.35; 10.40)	$X^2 = 7.401$ ($p = .007$)
Use of alcohol in pre-assessment month	Yes N (%)	789 (78.7%)	47 (61.0%)	2.35 (1.45; 3.81)	$X^2 = 12.702$ ($p < .001$)
Smokers	Yes N (%)	463 (63.5%)	40 (65.6%)		$X^2 = 0.103$ ($p = .748$)

Table 4. Significant results of logistic regression analysis

	B	SE	Exp (B)	95% CI	p
Age of onset	0.079	0.023	1.04	1.03; 1.13	.001
PHQ-9 score	0.112	0.039	1.12	1.04; 1.21	.004
Engaging in FOBT gambling	−2.368	0.654	0.09	0.02; 0.34	<.001
Engaging in sports betting	−2.796	1.106	0.06	0.01; 0.55	.011
Engaging in bingo	4.734	1.716	113.71	3.93; 3,284.83	.006

Note. PHQ-9 = Patient Health Questionnaire; FOBT = Fixed Odd Betting Terminal. Adjusted odd ratio [i.e., Exp (B)] greater than 1 imply that variables are more likely to be present in females than males. Number of observations = 380, $X^2 = 82.229$, $R^2 = .476$, and $p < 0.001$.

literature, women reported quicker development of problematic gambling, compared to men (Nelson et al., 2006).

A significant gender difference in the age of onset of problematic gambling behavior was also found, with females beginning gambling much later than males and reporting shorter of problematic gambling before contacting the clinic. Possible explanations for this difference have been grouped into two main conjectures: a direct effect of gender on problematic gambling, and a concomitance of gender, sociodemographic, and clinical factors (the "gender-as-proxy" theory; Nelson et al., 2006). The empirical evidence supporting a "telescoping effect" in the course of GD among women is consistent, suggesting that women are more likely than men to move rapidly through the multiple landmark events associated with the development and progression of GD (Grant, Oldaug, & Mooney et al., 2012; Potenza et al., 2001). However, a recent study among a non-treatment population did not support this theory, and suggested that the use of treatment-seeking samples may lead to incorrect conclusion about gender differences (Slutske, Piasecki, Deutsch, Statham, & Martin, 2015).

Bivariate and multivariate analysis on preferred gambling types showed that male gamblers had a preference for gambling on fixed-odds-betting-terminals, and sports betting, whereas gambling on bingo was strongly correlated with female gender. The distinction between FOBTs and regular gaming machines is another new finding of the present study.

Contrary to the previous studies (Petry, 2003), we did not find significant inter-gender difference concerning lower stakes, regular gambling machines otherwise known as "fruit machines." However, in our analysis, males were shown to have a preference for higher stakes gambling machines (FOBT). It is possible to mention that, as a partial explanation, the effect of structural and situational characteristics, such as the size of bets and wins, payout schedule, and venues in which these forms of gambling are available, namely,

authorized betting shops for FOBT, as opposed to pubs, clubs, and arcades, as is the case for regular gaming machines (Griffiths, 1993), as well as different impulsivity profiles between men and women (Echeburúa et al., 2011); a similar explanation might be applied, on the other hand, to preference for bingo among women in our sample (Ledgerwood & Petry, 2006). Political, social, and cultural determinants, e.g., the perceived acceptability/unacceptability of male and female gamblers in different gambling settings, might also play a very important role in gender-based preference for specific gambling types (LaPlante et al., 2006).

We found a small, although significant, difference in gambling involvement, in which male gamblers participated to more gambling activities than females, although they had lower gambling severity. The role of gambling involvement in treatment-seeking individuals has not yet been satisfactorily explored; however, it would appear that, in the general population, gambling involvement is a better predictor of problematic gambling development than any individual form of gambling, with the notable exception of FOBT machines, the usage of which had a strong association with problematic gambling behavior (LaPlante, Nelson, LaBrie, & Shaffer, 2011); this finding might partially explain the high rates of FOBT players in our sample.

Analysis of psychopathological variables showed that women had higher rates of anxious and depressive symptoms with respect to men. These results reflect previous findings on the GD population (Granero et al., 2009), and might suggest that women are more inclined to utilize gambling in an escape-oriented paradigm, a result that is compatible with the pathways model of problem gambling initiation, as postulated by Blaszczynski and Nower (2002).

Similar to the previous research (Grant & Potenza, 2005), we found no significant difference between males and females for tobacco smoking. However, in contrast with the previous results (Granero et al., 2009), we found that

males had higher levels of alcohol abuse, and higher rates of consumption of illicit drugs. It was proposed that, in the general population, social gender roles and biological differences in relation to alcohol might mediate a higher level of alcohol consumption for males. This explanation would also be in concordance with previous findings among treatment-seeking pathological gamblers, showing that parental history of alcohol abuse did not significantly differ between genders (Grant & Kim, 2002).

It is to be mentioned that 32% of the original sample did not complete the assessment procedure and was therefore excluded from our analysis; one possible hypothesis on how these assessment dropout rates might have affected our results is that subjects who did not complete the assessment procedures might have been patients with less severe symptoms who did not perceive the treatment of their gambling behavior as essential; another hypothesis is that subjects who did not complete the assessment were, on the other hand, more severe gamblers, e.g., the "antisocial impulsivist" gamblers, as described by Blaszczynski and Nower (2002).

The present study presented some limitations. First, we only considered a treatment-seeking population, which was shown to differ from the general gambling population, with lower proportions of women, people from ethnic minorities, and less severe problematic gamblers (Braun et al., 2014); moreover, the clinic's geographical location in the heart of a densely populated and ethnically diverse city, as well as the clinic's own referral process and ethnic preferences in terms of gambling behavior and gambling treatment seeking might have further influenced the results in terms of our sample's ethnic composition (Forrest & Wardle, 2011). Therefore, the findings in the present study cannot be generalized to all pathological gamblers. A further limitation was the fact that the measures we used were self-reported, and therefore might suffer from recall biases. Moreover, the cross-sectional nature of the study does not allow to verify clinical and sociodemographic variables over time in their relation to gambling behavior; therefore, longitudinal studies on gender differences among treatment-seeking gamblers, including the evolution of gambling-related, and clinical variables would help shed more light on how gender differences influence the natural history of GD. Among the strengths of this study, we cite its large sample, the fact this is the first study of its kind in the UK and the large number of gambling-related variables gathered.

In conclusion, our findings support the importance of bearing in mind gender differences in a treatment-seeking population of pathological gamblers, not only in terms of sociodemographic characteristics, but also in terms of different gambling behaviors and clinical variables. On the grounds of this work, we highlight the need for new methods of empowerment and involvement in treatment, particularly for women, to improve the access and retention in treatment. An even greater deal of attention is suggested in the treatment of women from minority ethnic groups and lower socioeconomic classes.

Second, we suggest that the differences between higher and lower stakes machines should be considered in further studies on GD. A third implication of this study is that, due to different gambling behavior patterns, gambling motives,

and psychiatric comorbidities, male and female gamblers might benefit from group-specific treatment offers.

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