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BRIEF COMMUNICATION

A cross-cultural study of gambling disorder: a comparison between women from Brazil and the United States

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Objective: To perform a cross-cultural comparison of gambling disorder (GD) in women from Brazil and the United States, two countries with pronounced social and cultural differences. We hoped to produce insight into the impact of cultural influences on the presentation of GD in women, which may be useful for the development of culturally-sensitive interventions.
Method: We assessed 681 women with GD: 406 from a Brazilian sample and 275 from a U.S. sample. We assessed demographic and gambling behavior variables in addition to co-occurring psychiatric disorders.
Results: Fewer Brazilian participants were Caucasian (73.3 vs. 91.3%; $p = 0.022$). Also, Brazilian women had lower levels of education (59.9% with high school or less vs. 44.4%; $p < 0.001$), and were more likely to have a current partner (54.9 vs. 43.4%; $p = 0.003$). Brazilian gamblers also reported lower urge scores (6.6 ± 4.3 vs. 11.6 ± 2.4; $p < 0.001$) and higher chasing rates (89.1 vs. 80.0%; $p = 0.002$). Brazilian gamblers reported higher rates of bingo gambling (19.2 vs. 5.7%; $p < 0.001$), but lower rates of card game gambling (5.8 vs. 23.1%; $p < 0.001$). Finally, Brazilian gamblers were more likely to endorse a history of major depressive disorder (36.9 vs. 24.4%; $p = 0.001$).
Conclusions: This study reinforces the need for further general cross-cultural research on GD and particularly for studies investigating how gender mediates these differences. Finally, the differences noted in this analysis suggest that the findings of predominantly Anglo-Saxon cultures may not be generalizable to other world populations.

Keywords: Gender differences; impulse control disorders; women; minority issues; cross-cultural psychiatry

Introduction

The gambling industry earns about 304 billion euros annually,[1] even in countries where gambling is legally restricted, such as Brazil.[2] In Brazil, government-sponsored lotteries alone earn more than 5 billion U.S. dollars annually,[3] an amount higher than the annual gross domestic product (GDP) of 54 countries in 2010.[4]

Gambling disorder (GD) is characterized as recurrent, problematic gambling behavior causing clinically relevant impairment.[5] The consequences of GD tend to be severe, with impact on patients and their families.[6] Although gambling has been traditionally associated with males, a recent increase in the incidence of GD amongst women has been recorded.[6,7] This increase is particularly worrisome because progression from recreational gambling to GD appears to occur more rapidly in female gamblers.[8]

Available evidence suggests that women tend to engage in different types of gambling, have different motivations, endorse different comorbidities, and begin gambling at an older age relative to men.[6] The majority of studies on GD in women have been conducted in Anglo-Saxon countries, particularly the United States. This might be a limitation, since cultural aspects appear to play a notable role in various features associated with GD, including psychopathology, prevalence, and cultural acceptance.[7,9] Given these distinctions, it is important to examine how sociocultural factors may shape the presentation of GD in women and whether the differences between female and male gamblers are also mediated by sociocultural factors.[7]

To date, little is known regarding cross-cultural differences between male and female subjects with GD. Despite the information garnered regarding gender differences amongst patients with GD, studies conducted outside the Anglo-Saxon countries in this area have had small samples and exclusively compared men and women from within the respective countries. As GD diagnostic and treatment research still depend largely on studies conducted in Anglo-Saxon cultures, we still do not know how applicable these findings are to other cultures. In short, there is a large gap in our understanding of how cultural factors impact the presentation of GD in women.

The objective of this study was to perform a cross-cultural comparison of GD in women from different countries. For that, we assessed demographic and gambling behavior

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variables in addition to co-occurring psychiatric disorders among 681 female patients from Brazil and the United States, two countries with pronounced sociocultural differences. This comparison may provide a better understanding of how the presentation of GD in women differs cross-culturally. It may also support the development of more culturally-sensitive interventions.

Methods

Ethical issues

This research was approved by the ethics committee of the three universities involved (Universidade de São Paulo, Brazil; University of Chicago, United States; University of Minnesota, United States). All participants provided written informed consent.

Participants

Brazilian and American participants were recruited through advertisement via the internet, radio, Gamblers Anonymous, newspapers, and public places. The advertisements aimed at recruiting patients for either clinical treatment or clinical trials. The current study enrolled individuals who were already being treated in these outpatient clinics or participating in clinical trials. Subjects were included if they met at least four DSM-5[5] criteria for GD. Exclusion criteria were: 1) unstable medical conditions or need for emergency care; 2) clinically relevant abnormalities on physical examination; 3) having fewer than 5 years of formal education; 4) psychotic symptoms; and 5) refusal to participate in this research.

The selected sample included 681 women with GD: 406 from Brazil and 275 from the U.S. Subjects were enrolled from outpatient clinics (359 Brazilian women, 88.4%; 13 American women, 4.7%) or ongoing clinical trials (47 Brazilian women, 11.6%; 262 American women, 95.3%).

Measures

Gambling disorder (GD) diagnosis

We used the Structured Clinical Interview for Pathological Gambling (SCI-PG), which was initially developed using DSM-IV criteria[10] but has since been modified for DSM-5. Trained psychiatrists conducted all diagnostic interviews. Results obtained prior to the release of the DSM-5 were processed retrospectively for alignment with changes made in the criteria for GD following the DSM-5.

Demographics

Information was collected on the following demographic variables: age, race, educational level, and marital status.

Gambling behavior

Participants were assessed for:

- GD course: age at onset of gambling activity, age at onset of GD, lag between onset of gambling activity and onset of GD.
- GD severity: defined by the total number of DSM-5 criteria endorsed (maximum 9).[5] Although illegal acts are not required for a DSM-5 diagnosis of GD, we included a separate analysis of this behavior as it is often considered a marker of severity.[11]
- Urge to gamble: assessed based on the score obtained in the first four questions of the Gambling Symptoms Assessment Scale (G-SAS).[12] The G-SAS is a reliable and validated self-report questionnaire that consists of 12 items. G-SAS Cronbach alpha is 0.0869.[12] G-SAS evaluates gambling symptoms in the past week (gambling urges, gambling thoughts, gambling behavior, and general functioning). The first four questions of this scale were designed to measure urges. Although the subdomain (urge) is still being validated in G-SAS, urges are assessed in this scale in a similar manner as that used in the validated Penn alcohol craving scale developed by Flannery et al.[13]
- Chasing (attempt to recover gambling losses with more gambling).[5] Chasing was analyzed separately because it seems to be influenced by certain social variables.[14] For example, according to Gainsbury et al., chasing is associated with lower socioeconomic status and irrational beliefs.[14] Therefore, we hypothesized that this behavior would be more prevalent in Brazil, a developing country with deep catholic roots. Additionally, chasing is one of few observable symptoms of GD, and can be noticed early in the GD course.
- Main types of gambling: patients were asked about the gambling games they played most frequently. Each patient listed one or two forms of gambling based on the frequency and negative consequences produced by the game.

Lifetime prevalence of co-occurring psychiatric disorders

Participants were evaluated for lifetime history of co-occurring psychiatric disorders. For that, we used the Mini International Neuropsychiatric Interview (MINI), a semi-structured interview that assesses the lifetime incidence of numerous disorders formerly classified under Axis I.[15]

Statistical analysis

Univariate analysis was used for comparison between the Brazilian and U.S. samples. The chi-square test was used for categorical variables. *t* tests and Mann-Whitney's tests were conducted to analyze continuous variables with normal and non-parametric distributions respectively. Kolmogorov-Smirnov test was used to assess the distribution of continuous variables. Bonferroni correction was used for adjustment of multiple comparisons. Significance was defined as $p \leqslant 0.012$ (0.05/4 = 0.012) for demographic variables and $p \leqslant 0.003$ (0.05/19 = 0.003) for clinical variables.

Results

The demographic comparison between the Brazilian and U.S. samples showed several significant differences (Table 1).

Females from the Brazilian sample were less likely to be Caucasian, had lower levels of education, and were more likely to have a current partner.

With respect to gambling behavior, the Brazilian sample began gambling at an earlier age and reported an earlier age at onset of GD. The severity profiles of the samples were similar. Figure 1 displays the distribution of GD severity levels in each sample.

Additionally, Brazilian gamblers reported lower urge scores and higher chasing rates than U.S. gamblers. Brazilian gamblers also reported playing bingo more frequently and card games less frequently than U.S. gamblers. Additionally, Brazilians endorsed higher rates of major depression. Table 1 summarizes results of the comparison between the Brazilian and U.S. samples.

Discussion

To the best of our knowledge, this is the first cross-cultural comparison of women with GD from two distinct countries. The sample used (n=681) is much larger than that employed in many prior gender comparisons.

Important demographic differences were observed between the two samples. Brazilian women with GD were more likely to have a current partner, to self-report their race as non-Caucasian, and to report lower levels of education. Previous studies including both men and women found similar differences between gamblers in Brazil and the United States, regardless of gender.[9,16] Therefore, the demographic differences identified in the current analysis appear to stem more directly from overall sociocultural differences between Brazil and the United States, rather than from specific gender differences. Also, these findings seem to support the notion that education level is an important consideration when assessing the efficacy of social and psychological interventions for GD. This issue is particularly important for clinicians recommending cognitive behavioral therapy (CBT), which is one of the most well-supported treatments for GD.[17] Lower education levels may actually compromise the effectiveness of classical CBT.

Another notable finding is that the Brazilian sample started gambling more than six years later than the U.S. sample. This difference may be due to the large availability of gambling opportunities in the United States, while legal gambling in Brazil is restricted.[2] A previous study comparing male and female gamblers in Brazil and the United States found similar results regarding age at onset of gambling behavior.[9] Beyond these initial findings, the present analysis found that chasing behavior was more common in Brazilian gamblers, a difference not previously observed in cross-cultural studies that approached GD in both genders.[9,16] Therefore, the chasing differences between the countries

Table 1 Comparison between women with gambling disorder (GD) in Brazil and in the United States

Variable	Brazil n=406	U.S. n=275	Coefficient	p-value
Demographics				
Age	47.3±11.0	49.0±11.0	$U = 50069$	0.022
Race				
Caucasian	297 (73.2)	251 (91.3)	$\chi^2 = 34.252$	< 0.001
Non-Caucasian	109 (26.8)	24 (8.7)		
Educational level				
High school or less	243 (59.9)	122 (44.4)	$\chi^2 = 15.814$	< 0.001
More than high school	163 (40.1)	153 (55.6)		
Marital status				
With partner	223 (54.9)	119 (43.3)	$\chi^2 = 8.906$	0.003
Without partner	183 (45.1)	156 (56.7)		
Clinical variables				
Age at onset of recreational gambling (n=665)	36.8±12.1	30.7±12.1	$U = 38234$	< 0.001
Age at onset of GD (n=661)	42.9±10.8	38.8±11.2	$U = 41384$	< 0.001
Lag between onset of recreational gambling and GD (n=256)	6.0±8.1	8.3±9.4	$U = 45426$	0.015
GD severity*	7.5±1.2	7.3±1.3	$U = 180009$	0.139
Illegal acts due to gambling (n=545)	170 (43.0)	65 (43.3)	$\chi^2 = 0.004$	0.950
Urges to gamble (n=225)	6.6±4.3	11.6±2.4	$U = 1435$	< 0.001
Chasing (n=630)	352 (89.1)	188 (80.0)	$\chi^2 = 9.995$	0.002
Electronic gaming machine (n=643)	320 (80.8)	198 (80.2)	$\chi^2 = 0.041$	0.840
Cards (n=643)	23 (5.8)	57 (23.1)	$\chi^2 = 41.642$	< 0.001
Bingo (n=643)	76 (19.2)	14 (5.7)	$\chi^2 = 23.112$	< 0.001
Lottery (n=643)	19 (4.8)	19 (7.7)	$\chi^2 = 2.292$	0.130
Videopoker (n=643)	17 (4.3)	11 (4.5)	$\chi^2 = .009$	0.923
Pulltabs (n=643)	4 (1.0)	11 (4.5)	$\chi^2 = 7.916$	0.007‡
Animal game (n=643)	11 (2.8)	0 (0.0)	$\chi^2 = 6.981$	0.009‡
Sports/tracks (n=643)	14 (3.5)	2 (0.8)	$\chi^2 = 4.657$	0.036‡
Alcohol use disorders†	9 (2.2)	26 (9.5)	$\chi^2 = 17.616$	0.001‡
Substance use disorders†	6 (1.5)	22 (8.0)	$\chi^2 = 17.690$	0.001‡
Major depressive disorder†	150 (36.9)	67 (24.4)	$\chi^2 = 11.955$	0.001
Any anxiety disorder† (n=680)	55 (13.6)	35 (12.7)	$\chi^2 = 0.104$	0.747

Data presented as mean ± standard deviation or n (%).
GD = gambling disorder; n = total sample for this variable; SD = standard deviation.
* GD severity was assessed by the total number of criteria endorsed according to DSM-5.
† Lifetime prevalence.
‡ Fisher's exact test was used due to the small cell size.

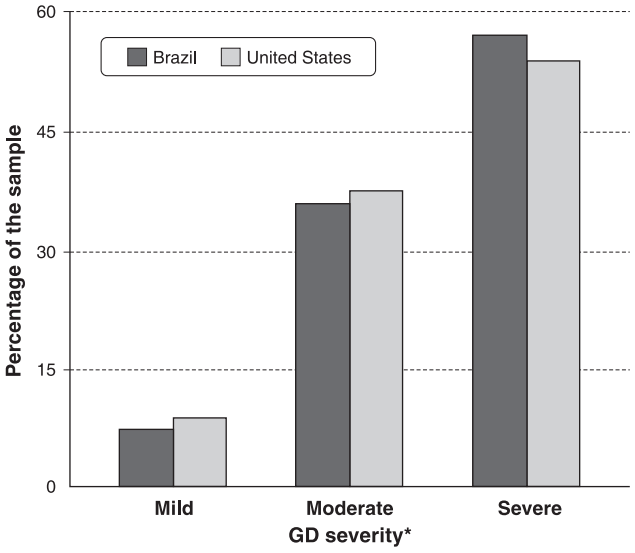


Figure 1 Levels of GD severity in women with GD from Brazil and the United States. GD = gambling disorder. *Gambling disorder severity was determined using DSM-5 criteria: mild = four or five criteria were met; moderate = six or seven criteria were met; severe = eight or nine criteria were met.

seem to be specific to women (i.e., Brazilian females with GD tend to chase more than American women with GD). This is important since chasing is one of the few observable symptoms of GD, and it can be detected early in the course of GD. Due to the rapid progression from recreational gambling to GD amongst female gamblers,[8] early interventions are critical. Given this concern, the higher rates of chasing behavior in Brazilian females may help with early diagnosis and prevent progression to GD.

As expected, electronic gaming machines (video-bingo, keno, etc.) were the games of choice for women in both samples. This trend is particularly worrisome given the possibly greater addictive potential of these games.[8] Brazilian women with GD also reported playing bingo more frequently than women from the United States, but played cards less frequently. The lower interest in card games has not been described in previous general comparisons between Brazil and the United States. This may suggest that the higher prevalence of card games is a unique cross-cultural difference between women from Brazil and the United States.

In addition to differences in gambling behavior, this analysis found a higher lifetime prevalence of major depressive disorder amongst female Brazilian gamblers. However, in both samples we found a lower prevalence of major depressive disorder than that reported by several previous studies.[18,19] For example, a large study conducted by Petry et al. observed a lifetime prevalence of major depressive disorder of 49.6% among individuals with GD.[18] Nonetheless, the cross-cultural difference found in our study may be considered an important finding. This difference has not been described in epidemiological studies looking at the general population in each country: Viana & Andrade observed a 16.9% lifetime prevalence of major depressive disorder in Brazil[20] while Kessler et al. found a lifetime prevalence of major depression of 16.6% in the United States.[21]

Additionally, clinical studies on GD that used Brazilian and American samples and compared gamblers from both genders did not find differences in the lifetime prevalence of major depressive disorder.[9,16] Therefore, specific elements of female gamblers may be mediating the discrepancies in the rates of depression between the two countries. A possible explanation is the lower gender equality in Brazil when compared to the United States[22] – the socioeconomic gap between Brazilian and American women is bigger than the socioeconomic gap between the men in these two countries. As socioeconomic status is inversely related not only to the rates of major depression but also to severity of depressive symptoms,[23] the lower sociocultural status of Brazilian women may mediate this difference.

The present study had several limitations. First, the study used treatment-seeking subjects, which limits generalizations. Also, the possibility of selection bias may not be excluded. In addition, this cross-sectional study used retrospective data, which may translate into recall bias, potentially limiting the accuracy of the information collected.

Despite these limitations, the present analysis revealed several significant differences between Brazilian and American women with GD. The discrepancies may be classified into two groups. The first group consists of differences that appear to be associated with more diffuse sociocultural aspects, rather than differences between women specifically, especially educational level, later onset of recreational gambling, and later onset of GD among Brazilian female gamblers. This type of finding had been previously reported in studies comparing male and female gamblers from Brazil and the United States.[9,16]

The second group of differences has not been described in general studies and appears to be more directly associated with differences in the gender norms of these countries. Highlights include higher chasing rates, lower interest in card games and higher lifetime prevalence of major depressive disorder in Brazilian women with GD. The present findings warrant the development of further general cross-cultural research on GD, particularly studies investigating how gender mediates differences. Finally, the differences noted in this analysis suggest that results from predominantly Anglo-Saxon samples may not be applicable to all world populations.

Disclosure

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