HHS Public Access

Author manuscript

Compr Psychiatry. Author manuscript; available in PMC 2016 April 01.

"Gambling disorder in older adults: a cross-cultural perspective"

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Abstract

INTRODUCTION—Gambling Disorder (GD) in older adults is significantly increasing and became an important public health issue in different countries. However, little is known regarding GD in older adults. The prevalence and acceptance of gambling varies among different cultures and this raises the question of how and to what extent culture affects older gamblers. The majority of the important studies regarding GD in older adults have been conducted mainly in Anglo-Saxon cultures and little information is available regarding GD in other cultures. The objective of this paper is to perform the first standardized cross-cultural comparison regarding older adults presenting GD.

METHODS—The total studied sample involved 170 subjects: 89 from the Brazilian (BR) sample and 81 from the American (US) sample. It consisted of 67 men and 103, women (average age = 64.42, standard deviation = ±3,86). They were evaluated for socio-demographics, gambling behavior variables and psychiatric antecedents.

RESULTS—Overall, there were significant differences between BR and US older adults gamblers in marital status, onset of gambling activity, onset of GD and urge scores.

DISCUSSION—This study showed that there are important differences in gambling course, gambling behavior and personal antecedents between two samples of older adults presenting GD from countries with different social-cultural background. It weakens the possibility of generalization of results found in Anglo-Saxon countries to other cultures and reinforces for the need for development of research on GD in older adults outside the Anglo-Saxon culture.

INTRODUCTION

Gambling is an ancient behavior that exists in almost every culture (1). There are reports that older adults - subjects aged 60 or older according to the World Health Organization (2) - who gamble recreationally could potentially have greater well--being relative to non-

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gamblers (3). However, there is strong evidence suggesting that Gambling Disorder (GD) in this age range is increasing and became an important public health issue in different countries (4,5,6). GD arises when the gambling behavior is persistent, recurrently problematic and leads to clinically significant impairment or distress (7). Several factors contribute to the increased prevalence of GD in older adults such as the ageing of the world population (6) and the larger gaming availability worldwide (5).

Despite its importance, little research has focused specifically on GD in older adults (4,5,6). Research to date has suggested that older adults with GD may have unique clinical presentations (i.e. older age of onset, greater rates of anxiety disorders), may have different motivations for gambling, and different consequences from gambling compared to younger gamblers (6,8,9,10). Therefore, older adults may require a special approach due to their particular general and mental health needs. (6,11). However, apparently GD has different presentations depending on sociocultural factors(1).

As a result of this cultural influence, the prevalence and acceptance of gambling varies among different cultures (1), and this raises the question of how and to what extent culture affects older gamblers. Thus, evaluating individual variables related to GD in the elderly across cultures may be useful in identifying possible differences in GD psychopathology and thereby may enhance treatment outcomes (1). The majority of the important studies regarding GD in older adults have been conducted mainly in Anglo-Saxon cultures (i.e., United States, United Kingdom, Canada and Australia) and relatively little information is available regarding GD in other cultures (12). Therefore, the majority of our knowledge regarding diagnostic, Psychopathology and treatment of GD in older adults comes from Anglo-Saxon cultures but we don't know how replicable are they in other parts of the world.

The objective of this paper is to perform the first cross-cultural study that compares different countries regarding older adults presenting GD. Our goal is to investigate in a standardized way the socio-demographics, gambling behavior and psychiatric antecedents among samples collected in Brazil and a United States, two countries that have differences in cultural and social background as well distinct legal status of gambling. Our hypothesis is that there are significant differences between GD in the older adults in those countries and that this comparison can lead to a better understanding of cultural influences of GD in this age group and can potentially suggest cultural adaptations for better therapeutic approaches.

METHODS

Ethics

All data collection was approved by the ethics committee of the Clinical Hospital of Medical School of the University of São Paulo (BR), by Institutional Review Board of University of Chicago (US) and by the Institutional Review Board of the University of Minnesota (US). Written informed consent was obtained from all individuals. This study followed the principles of the World Medical Association Declaration of Helsinki, which guides experimental procedures with human subjects.

Participants

The total studied sample involved 170 subjects: 89 from the Brazilian (BR) sample and 81 from the American (US) sample. It consisted of 67 men and 103, women (average age = 64.42, standard deviation = ±3,86).

The BR sample included patients that voluntarily sought treatment at the Gambling Outpatient Unit of University of São Paulo Hospital. The recruitment was made by advertisements (internet, radio, gamblers anonyms) that invited patients to clinical treatment and to clinical trials. A minor proportion came by external referral from low-complexity health services in the metropolitan area of São Paulo city. Subjects were recruited from 1996 to 2014.

The US sample consisted of older adults that were treated in the outpatient gambling unit at the University of Minnesota *(n=17; 21%)* and from clinical trials that were conducted between 2000 and 2014 at the Universities of Minnesota and Chicago *(n=64; 79%).* They were also recruited by media advertisements (newspapers, internet, public places).

Exclusion criteria were: (1) unstable medical illness or participants who needed emergency care, (2) clinically significant abnormalities on physical examination, (3) individuals who had less than 5 years of formal education, (4) patients that presented psychotic symptoms and (5) subjects that refused to participate in the study.

Measures

GD diagnostic—The GD diagnostic was made using the Structured Clinical Interview for Pathological Gambling, which is based on the criteria of the Diagnostic and Statistical Manual Fifth Edition (SCI-PG-DSM-5). Trained psychiatrists performed all diagnostic interviews. The different criteria collected before the release of DSM 5 were electronically saved and, then, a retrospective processing of the data for a proper adaptation to DSM 5 GD criteria was conducted.

Socio-demographic data—The two samples were evaluated for the socio-demographic variables gender, age, race, marital status and educational level.

Gambling behavior—All the participants were assessed for GD course variables: age of onset of gambling activity; age of onset of GD; lag onset of gambling activity and onset of GD; GD severity that was measured by the total number of DSM-5 criteria endorsed, which according to APA is related to different levels of severity (7). The subjects were also evaluated for *urge to gamble* in the past week, which can be reliably measured by the score of the first 4 questions of the Gambling Symptoms Assessment Scale, G-SAS (13), and for the *main forms of gambling* used. According to Grant and Potenza (2008) all the measures evaluated in this section (Gambling Behavior) are clinically important and could help to better understand the presentation of GD (14).

We highlight that the variables "urges" and "gambling disorder severity" were not collected in American outpatients and, thus, the final values for these two variables in the US sample refer only to clinical trials participants (n=64).

Psychiatric antecedents—Participants underwent a psychiatric interview using the Mini International Neuropsychiatric Interview (M.I.N.I.), a semi-structured interview that assessed the past existence of main comorbidities of "Axis I". This instrument is usually performed in approximately 45 minutes and was applied by professionals after a brief clinical training. Additionally, we assessed the past history of repetitive risky behaviors such as excessive sex, excessive buying and stealing. For this purpose, we used the criteria respectively of compulsive sexual behavior, compulsive buying and kleptomania of the Minnesota Impulsive Disorders Interview (MIDI), a validated semi-structured clinical interview (15).

Statistical Analysis

A univariate comparison between BR and US samples groups was performed. The samples were compared for socio-demographic data, severity of GD, gambling behavior variables and past psychiatric history. Chi-square test was used for categorical variables. ANOVA and Mann-Whitney's tests were used to analyze, respectively, continuous variables with normal distribution and non-parametric distribution. A significance level (p) of 0.05 or less was used. In order to achieve a final model that could differentiate BR and US older adults presenting GD, we conducted a binary logistic regression model where we introduced the clinically relevant and statistically significant variables.

RESULTS

First we performed a comparison between the two sub-groups in the American sample (outpatients versus clinical trial participants) and no variable demostrated a statistically significant difference.

The socio-demographic comparison between the BR sample and the US sample showed that the two groups had a similar profile (Table 1). The only socio-demographic variable that presented a significant difference between BR and US older adult gamblers was marital status (BR tend to have a partner more frequently).

The table 2 shows the comparison between the samples regarding gambling behavior variables. Overall, BR subjects presented a later beginning of gambling activity, later onset of GD and lower urge scores. Gambling severity, however, did not differ overall.

In terms of lifetime comorbidities, BR older adults gamblers were more likely to endorse a past history of major depressive disorder while US sample showed a trend to have higher rates of alcohol-related problems in the past. Lifetime history of risky behaviors such as sex, spending and stealing were more common in older adults from the US (Table 3).

All the variables (socio-demographic, gambling behavior and psychiatric antecedents) that were statistically significant and clinically relevant were introduced into a binary logistic regression model. Finally, we found that the variables that critically differentiated BR from US older adult gambles were *urges* and *age of onset of GD* **(Table 4).**

DISCUSSION

To our knowledge this is the first standardized cross-cultural comparison regarding GD in the older adults. We analyzed socio-demographics, gambling behavior variables and the psychiatric antecedents of 170 subjects from two countries with different socio-cultural backgrounds and gambling legislations: Brazil and United States. The two samples presented analogous recruitment strategies that may have resulted in very similar profiles regarding socio-demographics and severity of GD. The only difference in these variables was marital status, which was somehow expected since the divorce rate in the United States is much higher, approximately 9,5 per 1000 inhabitants in 2009 (16), than in Brazil, approximately 1,4 per 1000 inhabitants in the same year (17). This may suggest that clinicians should also focus on mental health of gamblers' partners particularly among Brazilian older adults gamblers since subjects living with a spouse with GD frequently experience significant emotional and physical distress (18).

The age of onset of gambling activity and the age of onset of GD were significantly earlier for the US sample in comparison to the BR sample. This may be due to earlier availability of gambling opportunities in the United States. Electronic gaming machines (EGM), as for example, slots, video-bingo and keno, were the most prevalent way of gambling in both samples. Research suggests that increased gambling opportunities may be associated with increased rates of GD (19) and our sample seems to support that this fact. First we highlight that EGM are found more often in casinos in the United States and in illegal bingo venues in Brazil. Casino gaming in the US was first legalized in 1931 but was disseminated widely throughout the country after 1989 (20). For example, before 1989, casinos were legalized only in Nevada and New Jersey but by the late 1990s, they were allowed in more than 25 states (20).

On the other hand, casino gaming was forbidden in Brazil in 1946 (21) and since then has never been legalized again. However, in 1993, a Brazilian federal law allowed the opening of bingo venues and loopholes made possible the establishment of EGM (22). After this year, there was an increase in bingo venues in Brazil, and although they were banned in 2004, there are still a large number of illegal bingo venues currently operating in this country (22, 23). Figure 1 displays the relationship between dissemination of gambling opportunities and year of onset of GD in our sample. Thus, it is possible assume that the current older adults gamblers are a "holdover" of the increment on GD prevalence after the increase of gambling availability in both countries. We highlight that the ineffective control of bingo venues by the Brazilian Government could possibly explain why EGM, although illegal, are used by Brazilian to older adults in similar levels to those in United States, where EGM are allowed in the majority of states. Proper control of illegal bingo venues in Brazil may therefore be an efficient public health policy to decrease the prevalence of GD in older adults of this country.

Another remarkable finding was the presence of typical games from a specific country among older adults presenting with GD, as for example, the "animal game" in Brazil. This form of gambling is a traditional, but illegal, lottery-like game where a person bets on animals instead of numbers (22). It was created in 1892 (24) and we found that 14.1% of the

BR sample considered it their main form of game that led to GD. However, there is no study on the profile, gambling behavior, phenomenology or cognitive errors related to this game. Thus, there is a need for further research in order to evaluate if traditional or classical forms of gambling are more common in the older adults than in general population what may suggest adaptations on therapeutic approaches. This finding also highlights the need for local research regarding GD in older adults. Additionally, bingo was more commonly played by the BR sample. This could be explained by the fact that in the United States, this form of gambling is more commonly used for charity purposes that arguably could reduce the risk of developing GD (25).

Finally, our results showed that the US sample had stronger urges to gamble. This intense desire (urge) usually arises when the subject is exposed to gambling cues such as advertisements, objects, places or talk associated with gambling (26). Although the US Government forbids casinos from mass media advertising such as billboards, radios and television, there are exceptions to this rule (27). In fact, there is an intense interpersonal approach to older adults in United States (27). Therefore, it is possible that, as gambling is more available and openly advertised in the US, subjects tend to report higher urge. On the other hand, gambling in Brazil in legally more restricted and, as a result of this, a more hidden issue. Behavioral strategies to avoid gambling triggers might be potentially more effective in Brazil.

This study had the following limitations: 1) This research used treatment-seeking samples what weakens the generalization to population levels although the information extracted from this article can be considered clinically valid. 2) The relatively small sample assessed possibly did not allowed the researcher to capture a more reliable picture of GD in older adults. Nonetheless, given the relatively narrow age range that could be evaluated, 170 subjects can be considered a reasonable number.

This study showed that there are important differences in gambling course, gambling behavior and personal antecedents between two samples of older adults presenting GD from countries with different social-cultural background. It weakens the possibility of generalization of results found in Anglo-Saxon countries to other cultures and reinforces the need for the development of research on GD in older adults outside Anglo-Saxon culture.

Acknowledgments

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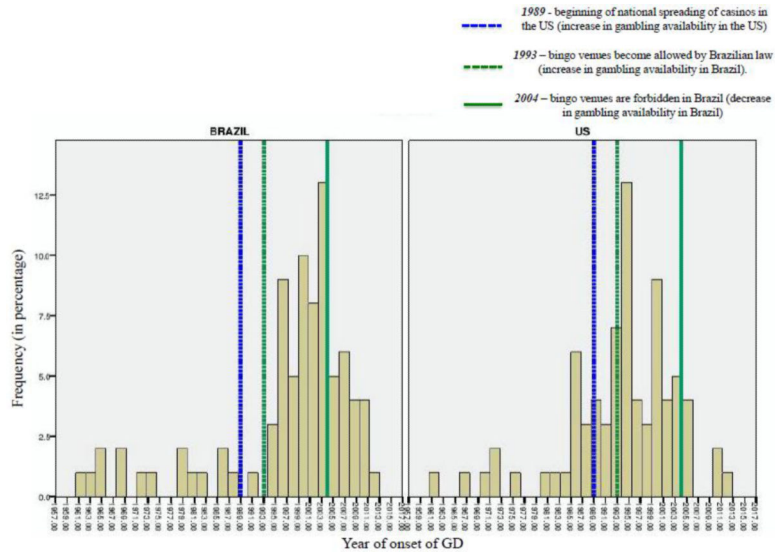
Figure 1.
Relationship between dissemination of gambling opportunities in Brazil and United States
(US) and the year of onset of Gambling Disorder (GD) in the Brazilian sample (left) and
American sample (right).

Table 1

Socio-demographics of older adults presenting Gambling Disorder (GD) in Brazil and United States (US).

SOCIO-DEMOGRAPHIC VARIABLE	Brazil *n = 89*	US *n = 81*	Test	
			Coefficient	*p*
- AGE IN YEARS	*64.7 (ST* [*] *=± 3.9*	*64.1 (ST =± 3.8)*	U=3186	.189
GENDER				
- *Male*	33 (37.1%)	34 (42%)	$\chi^2 = .426$	.512
- *Female*	56 (62.9%)	46 (58%)		
RACE				
- Caucasian	78 (87.6%)	74 (91.4%)	$\chi^2 = .619$	.431
- Non-Caucasian	11 (12.4%)	7 (8.6%)		
MARITAL STATUS				
- With partner	59 (66.3%)	40 (49.4%)	$\chi^2 = 4.985$	*.026*
- Without partner	30 (33.7%)	41 (50.6%)		
EDUCATION				
- High school or less	55 (61.8%)	41 (50.6%)	$\chi^2 = 2.156$	.142
- More than high school	34 (38.2&)	40 (49.4%)		

[*]
Standard Deviation

Table 2

Gambling behavior variables of older adults presenting Gambling Disorder (GD) in Brazil and United States (US).

GAMBLING BEHAVIOR VARIABLES	Brazil *Mean (ST*[*]*)*	US *Mean (ST)*	Test	
			Coefficient	*P*
- Age of gambling onset	43.9 (±16.1)	38.8 (±15)	U=2666	*.023*
-Age of GD onset	52.9 (±13.2)	50.5 (±11.2)	U=2712	*.019*
- Lag between gambling onset and GD (in years).	9.3 (±10.3)	11.8 (±11.2)	U=2927	.202
- Urge to gamble[#]	5.3 (±3.57)	10.3 (±2.69)	U=1484	*<.001*
- GD Severity[##]	6.9 (±1.7)	6.8 (ST=±1.3)	U=870.6	.459

MAIN FORMS OF GAMBLING[***]	n (%)	n (%)	Coefficient	p
➤ **Any strategic game**	12 (15.4%)	20 (27%)	x^2=3.097	.078
- Card games	11 (14.1%)	18 (24.3%)	x^2=2.570	.109
- Non-card strategic games	4 (5.1%)	2 (2.7%)	x^2=.589	.682[**]
➤ **Any non-strategic game**	69 (88.5%)	67 (90.5%)	x^2=.174	.676
- Electronic machines	57 (73.1%)	60 (81.1%)	x^2=1.373	.255
- Video Poker	4 (5.1%)	5 (6.8%)	x^2=.181	.741[**]
- Bingo	14 (17.9%)	2 (2.7%)	x^2=9.372	*.003*[**]
- Lottery	6 (7.7%)	4 (5.4%)	x^2=.373	.746[**]
- Pull tabs	0 (0%)	4 (5.4%)	x^2=4.330	.054[**]
- Animal Game[###]	12 (14.1%)	0 (0%)	x^2=11.300	*<.001*[**]

[*] standard deviation

[**] Due to the low number of subjects positive in this variable, Fisher's exact test was used for a more rigorous comparison.

[***] Each person listed up to two main forms of gambling

[#] urge to gamble in the past week, measured by the first 4 questions of the Gambling Symptoms Assessment Scale (G-SAS)

[##] GD severity was measured by the total number of criteria endorsed according to the Fifth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

[###] Animal game is a traditional, but illegal, lottery-like Brazilian game where you bet in animals instead of numbers.

Table 3

Psychiatric antecedents of older adults presenting Gambling Disorder (GD) in Brazil and United States (US).

Variables	BRAZIL *n=89*	US *n=81*	Test Coefficient	P
• *ANY PAST PSYCHIATRIC DISORDER*	37 (41.6%)	34 (42%)	x^2=0.003	.958
- Alcohol-use disorder	6 (6.7%)	13 (16%)	x^2=3.701	.054
- Substance-use disorder	3 (3,4%)	5 (6,2%)	x^2=0.742	.481[*]
- Major depressive disorder	30 (33.7%)	16 (19.8%)	x^2=4.184	*.041*
- Any anxiety disorder	10 (11.2%)	6 (7.4%)	x^2=0.729	.393
- Any other diagnosis	3 (3,4%)	4 (4,9%)	x^2=0.264	.710[*]
• *PAST REPETITIVE RISK BEHAVIOUR (excessive sex, excessive buying or stealing)*	0 (0%)	7 (8.6%)	x^2=8.022	*.005*[*]

[*] Due to the low number of subjects in this variable, Fisher's exact test was used for a more rigorous comparison.

TABLE 4

Binary logistic regression for the Brazilian and the American samples of older adults presenting with gambling disorder (GD), final model[*].

Variables	Wald χ2	p value	B	Exp (B)	Confidence interval (95%) [Lower; Upper]
Urges	8.723	.001	.323	1.381	[1.115; 1.711]
Age of onset of GD	6.405	.002	−.076	.926	[.873; .983]
Constant	.000	.985	.031	1.032	

Model summary: χ2 = 25.183; degrees of freedom = 2, p < 0.001; Nagelkerke's R2 = 0.490

[*] The forward and backward strategies led to the same final model.