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A Comparison of Gambling-Related Cognitions and Behaviors in Gamblers from the United States and Spain

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ABSTRACT

Few studies have compared clinical characteristics of gambling disorder (GD) from a cross-cultural perspective. In the present study, we aimed to examine differences in gambling-related cognitions, gambling preferences, GD severity and other clinical and sociodemographic in individuals with GD in the United States and Spain. Two groups of participants with GD (from the United States of America (USA; n =109) and Spain (n =243)) were compared using the South Oaks Gambling Screen (SOGS) and the Gambling-Related Cognitions Scale (GRCS). In Spain, the prevalence of participants who reported only non-strategic gambling preferences was higher, whereas in the USA, participants tended to engage in both strategic and non-strategic gambling activities. Moreover, Spanish participants reported higher GD severity, while participants in the USA endorsed greater gambling-related cognitions. Our findings suggest that there are jurisdictional differences in terms of gambling-related cognitions, gambling preferences, and problem-gambling-severity levels among individuals in the USA versus Spain. These differences, which may reflect cultural or other factors, should be investigated further and considered when developing and implementing interventions for GD.

Keywords: gambling disorder, severity, cognition, cross-cultural, addiction.

INTRODUCTION

Gambling has been an activity of entertainment and leisure in different cultures since ancient times (Richard et al., 2017). The 1990s experienced considerable expansion of commercial gambling in many jurisdictions (Hodgins & Petry, 2016). A relaxation of regulations occurred in some countries, such as the United States of America (USA); arguably, more substantial changes occurred in other countries, such as Spain, during its post-dictatorship period, with the aim of attracting both national and international tourism (Chóliz & Sáiz-Ruiz, 2016; Hodgins & Petry, 2016; Jiménez-Murcia et al., 2014).

Increases in the accessibility to commercial gambling and its regulation has varied according to types of gambling, including non-strategic (mostly via lotteries and electronic gambling machines (EGMs or slot machines)) and strategic (including sports betting and casino games such as poker, among others) forms (Hodgins & Petry, 2016). In the USA, there were notable differences between the 48 states that allowed gambling and between the accepted types of gambling, with New Hampshire legalizing lottery gambling in 1964 and New Jersey joining Nevada by introducing casinos in 1978 (National Research Council, 1999; Petry & Blanco, 2013). In Spain, after the legalization of EGMs, bingo and casinos in 1977, these types of gambling, together with sports betting, including wagering on the internet, became particularly popular (Chóliz & Sáiz-Ruiz, 2016; Jiménez-Murcia et al., 2014). Considering offline gambling forms in Spain, EGM gambling may be problematic for some people, potentially through specific game characteristics, as well as their availability in bars and restaurants (Calado & Griffiths, 2016). Similar concerns about EGM gambling have been raised in other countries and populations (N. Dowling et al., 2005), including in the USA and particularly for women (Potenza, Steinberg, et al., 2001).

When patterns of gambling negatively impact personal, social or work obligations, it can be considered problematic or disordered (American Psychiatric Association, 2013; Fauth-Bühler et al., 2017; Yau & Potenza, 2015). Gambling disorder (GD), the formal diagnostic entity included in the fifth edition of the Diagnostic and Statistical Manual (DSM-5; (American Psychiatric Association, 2013)) and eleventh edition of the International Classification of Diseases (ICD-11; (World Health Organization, 2018)), may present differently and have different prevalence rates worldwide in part based on jurisdictional or cultural factors (Raylu & Oei, 2004a). The worldwide prevalence of GD may range from 0.15% to 3.5% (Stucki & Rihs-

Middel, 2007), with lifetime prevalence estimates in the USA ranging from 0.4% to 2.0% (Petry et al., 2005) and in Spain from 0.2% to 3.3% (Becoña, 2004; DGOJ, 2015; Jiménez-Murcia et al., 2014). In the USA, studies using formal criteria in nationally representative samples across jurisdictions have found past-year estimates ranging from 0.1% to 0.7% (Petry et al., 2018).

Jurisdictional, cultural and racial/ethnic factors may impact the development of GD in complex and interrelated ways (Richard et al., 2017; Welte, Barnes, Wieczorek, Tidwell, et al., 2004). Multiple sociodemographic variables associated with GD have been identified (Gray, 2004). In the USA, multiple factors are linked to GD including, being male, divorced marital status, young age (adolescent/young adult), less formal education, trauma experience, being of minority racial/ethnic status and having psychiatric disorders (including substance-use, depressive, anxiety and personality disorders (Stefanovics et al., 2017; Volberg et al., 2018; Welte, Barnes, Wieczorek, & Tidwell, 2004). In the USA, preferred forms of gambling include EGMs, casino gambling, and (instant) lotteries (Potenza, Kosten, et al., 2001). Engagement in online gambling appear to be increasing over time, including sports gambling, with recent legalization changes in sports betting making this form more accessible (Potenza et al., 2019). The most common clinical characteristics of individuals seeking treatment in Spain include male gender, single marital status, being employed, limited social support, and early gambling onset. In Spain, GD has also been linked to cognitive impulsivity, emotional dysregulation, and less self-direction, and preferred forms of gambling include EGMs, (instant) lotteries and online betting (DGOJ, 2017).

Other clinical factors include distorted gambling-related cognitions, described as irrational and dysfunctional beliefs about gambling outcomes and the ability to predict or influence them (Leonard et al., 2015; Lévesque et al., 2018; Potenza, 2014; Toneatto, 2002). These erroneous thoughts have been linked to gambling frequency and GD severity (Del Prete et al., 2017; Emond et al., 2010) and may be particularly relevant to strategic gambling (Lévesque et al., 2018; Toneatto et al., 1997). Gambling-related cognitions may differ across cultural or racial/ethnic groups. For example, relative to Chinese Australians, Caucasian Australians reported higher gambling-related cognitions, mainly gambling-related expectancy biases (Tang & Oei, 2011), whereas Chinese Australians were more likely to demonstrate biases relating to illusions of control and perceived inabilities to stop gambling (Oei et al., 2008).

Aims and hypotheses

Little research has investigated jurisdictional or cultural influences on GD (Richard et al., 2017), thereby limiting the generalization of findings and how interventions may operate more globally (Gray, 2004). Therefore, the primary goal of this study was to compare gambling-related cognitions and GD severity levels taking into consideration gambling modality (strategic versus non-strategic in accordance to a previously used categorization (Potenza et al., 2000)) in two samples, one from the USA and another from Spain. Furthermore, we aimed to explore differences between these groups in sociodemographic characteristics. Choosing these two countries was due, among other factors, to the relevant historical differences in more liberal regulation of gambling (Hodgins & Petry, 2016; Jiménez-Murcia et al., 2014).

METHODS

Participants and procedure

The sample from the USA was comprised of 109 participants who met criteria for GD. They were recruited through advertisements in the Problem Gambling Clinic at a University. Individuals aged 18 or older with a diagnosis of DSM-IV pathological gambling as determined by structured interview were included (Grant et al., 2004).

The study sample also included 243 treatment-seeking participants from the Outpatient Gambling Disorder Unit at the Department of Psychiatry of a University Hospital, in Spain. All patients met diagnostic criteria for GD.

Measures

GD severity

South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987)

This self-report 20-item screening questionnaire discriminates between individuals with probable pathological, problem and non-problem gambling. The SOGS provides good psychometric properties both in its original version and in its Spanish adaptation (Echeburúa et al., 1994).

Gambling-related cognitions

The Gambling-Related Cognitions Scale (GRCS) (Raylu & Oei, 2004b)

This is a 23-item self-report questionnaire that assesses irrational cognitions related to gambling on a seven-point Likert scale, classifying distortions into five subscales: gambling-related expectancies (e.g. “Gambling makes me happier”), illusion of control (e.g. “Praying helps me win”), predictive control (e.g. “Losses when gambling are bound to be followed by a series of wins”), perceived inability to stop gambling (e.g. “It is difficult to stop gambling as I am so out of control”) and interpretive bias (e.g. “Relating my winnings to my skill and ability makes me continue gambling”). The GRCS provides good psychometric properties both in its original version and in its Spanish adaptation (GRCS-S; (Del Prete et al., 2017)).

Statistical analysis

Statistical analysis was conducted using Stata15 for Windows. Between-group contrasts used proportion comparison tests (chi-square, χ^2) for categorical variables and mean comparison tests (t-tests and analyses of variance; ANOVAs) for quantitative variables. The specific analyses comparing groups defined by the geographic origin of the sub-samples (USA *versus* Spain) included as covariates the sociodemographic features which achieved a different frequency distribution between both countries (race, marital status and education level). The remaining analyses carried out stratified by the geographic origin of the participants (that is, within the subsamples recruited separately in USA and Spain), the only controlled variable was the participants’ sex (this characteristic was considered as a covariate due to the strong association reported in the scientific literature between gender with most gambling related variables) (Dowling et al., 2017). The effect sizes for proportion and mean comparisons carried out with χ^2 and ANOVA tests were estimated through Cohen’s-*d* coefficient, considering $|d|>0.20$ to be a small effect size, $|d|>0.5$ to be moderate and $|d|>0.8$ to be large (Kelley & Preacher, 2012).

Associations between problem-gambling severity (measured with the SOGS total score) and gambling-related cognitions (GRCS scores) were based on partial correlations, adjusting for gender. Due to associations between sample size and significance tests for correlation estimates (high coefficients may be statistically non-significant in small samples, while low coefficients may achieve statistical significance in large samples), effect sizes for correlations was based on Rosnow-Rosenthal thresholds ($|R|>0.10$ was

considered small, $|R| > 0.24$ was considered moderate and $|R| > 0.37$ was considered large; these thresholds correspond to Cohen's d values of 0.20, 0.50 and 0.80, respectively; (Rosnow & Rosenthal, 1996)).

In this study, increases in type-I errors due to multiple statistical comparisons were adjusted with Finner's method, a family-wise-error-rate stepwise system which has been suggested to be more powerful than Bonferroni correction (Finner, 1993).

Ethics

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects were approved by the Human Investigation Committees. Written informed consent was obtained from all subjects.

RESULTS

Sample characteristics

Sociodemographic measures for both groups are described and compared in Table S1 (supplementary material). Differences in sample characteristics between countries were found for gender (a higher proportion of women in the US (26.6%) versus Spanish (7.0%) samples, $p < .001$), race (a higher proportion of white-Caucasians in the Spanish (93.8%) versus US (63.3%) samples, $p < .001$), marital status (higher proportion of divorced-separated patients in the US (25.7%) versus Spanish (12.3%) samples, $p < .001$) and education level (higher levels in the US (30.3%) versus Spanish (8.6%) samples, $p < .001$). Participants' mean age in Spain (mean=42.5, SD=13.2) did not differ from that in the USA (mean=43.8, SD=12.4; $p = .359$).

Comparison of gambling preferences between countries

Table 1 includes the prevalence estimates of gambling preferences by country. The proportion of participants who reported gambling in casinos and on cards, horses/sports, dice, lotteries and other gambling activities was higher in the USA, whereas in Spain, higher prevalence for gambling on EGMs and bingo was found. The prevalence of participants who reported only non-strategic gambling preferences was higher in Spain than in the USA (58.0% vs. 11.9%). Participants from the USA were more likely than those in Spain to engage in both strategic and non-strategic gambling activities (61.5% vs. 36.2%). Differences between

countries were found also for the total number of problematic gambling activities (mean of 3.5 in the USA compared to 2.2 in Spain, $p<.001$).

--- Insert Table 1 ---

Associations between gambling preferences and gambling-related cognitions

Table 2 includes the differences in gambling-related cognitions based on gambling preferences (non-strategic/strategic/both), stratified by country. Results obtained in the ANOVA, adjusted for gender, showed that higher GRCS scores were related to preferences for both non-strategic and strategic activities, while lower GRCS scores were found in the non-strategic group. Significant differences were observed comparing the non-strategic group versus other preference groups, with all the GRCS subscale scores obtaining significance except for that relating to perceived inability to stop gambling.

--- Insert Table 2 ---

Comparison of problem-gambling severity and gambling cognitions between countries

Table 3 includes results of the ANOVA (adjusted for gender, race, marital status and education) comparing problem-gambling severity and gambling-related cognitions between countries. Participants from Spain demonstrated higher problem-gambling severity, while participants from the USA demonstrated higher GRCS scores. Analyses stratified by gender obtained similar results (Table S2).

--- Insert Table 3 ---

Association between problem-gambling severity and gambling-related cognitions

Table 4 includes partial correlations (adjusted for gender) measuring associations between problem-gambling severity (measured with SOGS total scores and the total number of gambling activities) and GRCS scores. No significant correlations were obtained in the Spanish group. Higher scores on the SOGS and more gambling activities were related to higher levels of illusion of control and global cognitive bias in the US sample.

--- Insert Table 4 ---

DISCUSSION

This study analyzed whether there were differences in gambling-related cognitions, gambling preferences and problem-gambling severity between individuals with GD in the USA and Spain. In the US sample, the percentage of women with GD was higher, as well as the education level of the participants. Proportions of white-Caucasians and individuals who had stable partnered relationships were higher in the Spanish sample. However, no differences in age were found between the two groups. Similar patterns have been observed in other addictions, suggesting jurisdictional similarities between substance-use disorders and GD (Carballo et al., 2014).

Regarding gambling preferences, the proportion of participants who reported engaging in both strategic and non-strategic gambling was higher in the USA, whereas a higher proportion of non-strategic gambling only (e.g., EGMs and bingo) was observed in Spain. At the clinical level, the relevance of gambling preferences in establishing subtypes of players has been highlighted (Odlaug et al., 2011). Individuals engaging in non-strategic gambling may be seeking emotional escape, while those who prefer strategic gambling (forms that involve more complex decision-making processes) may be seeking arousal (Cocco et al., 1995; Ledgerwood & Petry, 2006). Direct investigation of underlying motivations is needed to investigate this possibility and translate findings into improved interventions.

In both countries, participants with higher GRCS scores showed preferences for both non-strategic and strategic gambling activities. The results resonate with prior findings regarding the relevance of gambling-related irrational cognitions to types of gambling behaviors (Lévesque et al., 2017; Mouneyrac et al., 2018). Previous studies have suggested a positive association between gender and gambling-related cognitions, with males having higher levels than females (Grall-Bronnec et al., 2012; Iliceto et al., 2015; Raylu & Oei, 2004b). Finding higher GRCS scores could therefore be expected in the Spanish sample, taking into account the proportion of males in both groups. However, scores were higher in the American sample, which suggests possible cultural differences in cognitive styles. Likewise, the group with greater problem-gambling severity may be expected to show higher gambling-related cognitions since cognitive distortions have been suggested as being important in the development and maintenance of GD (Delfabbro et al., 2009; Donati et al., 2015) in both men and women (DGOJ, 2017). However, another conclusion that can be derived from these findings is that the interaction between the severity of GD and gambling-related cognitions is complex

and should be studied further. In particular, identifying specific cultural or jurisdictional factors relating to the present relationships may help aid country-specific interventions for GD.

Finally, when grouping forms of gambling into strategic/non-strategic/both forms, no association between problem-gambling severity and gambling preferences was observed. However, the Spanish sample presented with greater problem-gambling severity and a greater preference for only non-strategic gambling. Previous studies in a Spanish sample did not find a clear relationship between these two factors (Odlaug et al., 2011). Given that the Spanish and US samples were recruited differently (with the Spanish sample seeking outpatient treatment and the US sample seeking involvement in research but not necessarily treatment-seeking), further research is needed to investigate the extent to which problem-gambling severity and other factors may relate to treatment-seeking status.

Limitations

The present study has limitations. First, differences between samples may relate to treatment-seeking status. In Spain, participants were enrolled in cognitive-behavioral treatment, which could indicate that they were more motivated to address GD in a cognitive fashion. Second, the cross-sectional nature of this study does not allow inferences regarding causality. Third, the GRCS questionnaire may not apply equally to all gambling forms, such as poker (Brochu et al., 2015; Lévesque et al., 2017). Fourth, jurisdictional and cultural factors that may explain differences across countries were not directly assessed. Future studies should examine these factors.

CONCLUSIONS

The results shed new light on the clinical features related with GD in two countries, indicating the relevance of considering jurisdictional and cultural contexts. Moreover, they provide insights for developing targeted interventions, suggesting the need to adapt approaches to patient populations specific to each country.

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Availability of Data and Material

Individuals may inquire with Dr. Potenza and Dr. Jiménez-Murcia regarding availability of the data as there exist ongoing studies using the data. In order to avoid overlapping research efforts, Dr. Potenza and Dr. Jiménez-Murcia will consider requests on a case-by-case basis. Conflict of interest None of the authors have any conflicts of interest. Marc Potenza has consulted for Rivermend Health, Opiant Therapeutics, Game Day Data, Addiction Policy Forum and AXA; has received research support from Mohegan Sun Casino and the National Center for Responsible Gaming; has participated in surveys, mailings or telephone consultations related to drug addiction, impulse-control disorders or other health topics; has consulted for and/or advised gambling, health and legal entities on issues related to impulse-control/addictive disorders; has provided clinical care in a problem gambling services program; has performed grant reviews for research-funding agencies; has edited journals and journal sections; has given academic lectures in grand rounds, CME events and other clinical or scientific venues; and has generated books or book chapters for publishers of mental health texts.

Ethics Approval

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects were approved by the Yale Human Investigation Committee and the Bellvitge University Hospital Clinical Research Ethics Committee. Written informed consent was obtained from all subjects

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Table 1

Comparison of gambling preferences in the two subsamples

		Spain		USA					
		(n=243)		(n=109)					
		n	%	n	%	χ^2	df	p	d
Cards		46	18.93%	60	55.05%	46.64	1	<.001*	0.81†
Betting on horses		7	2.88%	25	22.94%	36.62	1	<.001*	0.63†
Betting on sports		17	7.00%	45	41.28%	60.96	1	<.001*	0.87†
Dice games		35	14.40%	30	27.52%	8.60	1	.003*	0.33
Casino		59	24.28%	63	57.80%	37.33	1	<.001*	0.72†
Lotteries		123	50.62%	68	62.39%	4.20	1	.040*	0.24
Bingo		63	25.93%	11	10.09%	11.36	1	.001*	0.42
Stock market		12	4.94%	8	7.34%	0.81	1	.368	0.10
Slot machines		160	65.84%	46	42.20%	17.33	1	<.001*	0.52†
Others		14	5.76%	26	23.85%	24.45	1	<.001*	0.53†
Strategic	Only non-strategic	141	58.0%	13	11.9%	74.21	2	<.001*	1.10†
	Only strategic	14	5.8%	29	26.6%				0.59†
	Both (strategic + non-strategic)	88	36.2%	67	61.5%				0.52†
		Mean	SD	Mean	SD	T	df	p	d
Total number of games		2.21	1.84	3.50	2.12	5.83	1/350	<.001*	0.65†

Note. SD: standard deviation df: degrees of freedom.

*Bold: significant comparison.

[†]Bold: effect size in the moderate ($|d| > 0.50$) to large range ($|d| > 0.80$).

Table 2

Association between gambling preferences and gambling related cognitions (GRCS scales):
ANOVA adjusted for sex

	Non-strategic		Strategic		Both		Non-strat.		Non-strat.		Strategic	
Spain	(n=141)		(n=14)		(n=88)		vs strategic		vs both		vs both	
	Mean	SD	Mean	SD	Mean	SD	p	d	p	d	p	d
Gambling expectancies	11.08	7.23	11.13	6.41	13.84	7.64	.979	0.01	.006*	0.37	.200	0.38
Illusion of control	6.86	4.47	9.13	6.94	8.79	5.69	.116	0.39	.007*	0.38	.815	0.05
Predictive control	15.13	8.07	17.63	7.50	18.04	9.34	.298	0.32	.014*	0.33	.869	0.05
Inability to stop gambling	16.09	8.46	17.14	4.66	17.88	9.28	.664	0.15	.133	0.20	.768	0.10
Interpretative control/bias	12.13	6.64	13.92	6.22	14.96	7.76	.368	0.28	.004*	0.39	.608	0.15
Total score	61.3	28.1	69.0	25.4	73.4	33.8	.368	0.29	.004*	0.39	.612	0.15
USA	Non-strategic		Strategic		Both		Non-strat.		Non-strat.		Strategic	
	(n=13)		(n=29)		(n=67)		vs strategic		vs both		vs both	
	Mean	SD	Mean	SD	Mean	SD	p	d	p	d	p	d
Gambling expectancies	17.48	6.00	17.70	5.38	17.59	6.91	.923	0.04	.956	0.02	.943	0.02
Illusion of control	11.25	5.88	9.93	6.07	13.30	6.77	.556	0.22	.300	0.32	.028*	0.52†
Predictive control	20.83	6.39	19.64	6.23	21.62	7.53	.626	0.19	.715	0.11	.234	0.29
Inability to stop gambling	20.06	6.44	18.59	7.89	21.14	7.84	.575	0.20	.640	0.15	.153	0.32
Interpretative control/bias	16.82	5.22	17.25	4.63	17.36	6.11	.826	0.09	.751	0.10	.929	0.02
Total score	86.4	21.9	83.1	22.4	91.0	29.7	.720	0.15	.578	0.18	.213	0.30

Note. SD: standard deviation.

*Bold: significant comparison.

†Bold: effect size in the moderate ($|d|>0.50$) to large range ($|d|>0.80$).

Table 3

Comparison of gambling severity (SOGS total) and gambling related cognitions (GRCS scales) between the groups: ANOVA adjusted for sex, race, marital status and education

	Spain		USA		$F_{(df=1/344)}$	p	$ d $
	$(n=243)$		$(n=109)$				
	$Mean$	SD	$Mean$	SD			
SOGS Total score	14.28	4.691	12.70	3.77	6.96	.009*	0.37
GRCS Gambling expectancies	12.36	7.412	17.06	6.38	23.47	<.001*	0.68†
GRCS Illusion of control	7.67	5.173	12.11	6.64	33.56	<.001*	0.75†
GRCS Predictive control	16.18	8.608	21.23	7.06	20.70	<.001*	0.64†
GRCS Inability to stop gambling	16.76	8.616	20.51	7.79	10.82	.001*	0.46
GRCS Interpretative control/bias	13.38	7.133	17.00	5.61	15.54	<.001*	0.56†
GRCS Total score	66.35	30.566	87.87	27.23	28.27	<.001*	0.74†

Note. SD: standard deviation df: degrees of freedom.

*Bold: significant comparison.

†Bold: effect size in the medium/moderate ($|d|>0.50$) to large range ($|d|>0.80$).

Table 4

Association between gambling severity (SOGS total and number of games) with gambling-related cognitions (GRCS scales): Partial correlation adjusted for sex

GRCS scales	Spain (n=243)		USA (n=109)	
	SOGS	Games	SOGS	Games
Gambling-expectancies	.166	.082	.163	.072
Illusion of control	.063	.086	.241[†]	.359[†]
Predictive control	.060	.072	.202	.167
Inability to stop gambling	.119	.059	.222	.178
Interpretative control/bias	.153	.130	.219	.089
Total score	.136	.100	.258[†]	.247[†]

Note. [†]Bold: effect size in the moderate ($|R|>0.24$) to large range ($|R|>0.37$).

Table S1 (supplementary)

Description of sociodemographic variables

		Spain (n=243)		USA (n=109)		χ^2	df	p
		n	%	n	%			
Sex	Women	17	7.0%	29	26.6%	25.47	1	<.001*
	Men	226	93.0%	80	73.4%			
Race	White	228	93.8%	69	63.3%	92.52	2	<.001*
	Black	0	0.0%	37	33.9%			
	Other (Latino/Asian)	15	6.2%	3	2.8%			
Marital status	Single	102	42.0%	63	57.8%	29.61	2	<.001*
	Married / Stable partner	111	45.7%	18	16.5%			
	Divorced / Separated	30	12.3%	28	25.7%			
Education	Primary	132	54.3%	36	33.0%	30.11	2	<.001*
	Secondary	90	37.0%	40	36.7%			
	University	21	8.6%	33	30.3%			
		Mean	SD	Mean	SD	T	df	p
Age (years-old)		42.48	13.24	43.85	12.37	0.92	350	.359
Education (years)		11.63	1.95	13.90	1.93	10.12	350	<.001*

Note. df: degrees of freedom. *Bold: significant comparison.

Table S2 (supplementary)

Comparison of gambling severity (SOGS total) and gambling related cognitions (GRCS scales) between sexes: ANOVA adjusted by race, marital status and education

	Women-Spain (n=17)		Women-USA (n=29)		F _(df=1/42)	p	d
	Mean	SD	Mean	SD			
SOGS Total	13.62	4.04	12.57	4.24	0.63	.433	0.25
GRCS Gambling expectancies	14.07	7.84	19.37	6.74	5.58	.023*	0.73[†]
GRCS Illusion of control	6.98	5.08	13.67	6.99	10.86	.002*	1.10[†]
GRCS Predictive control	15.12	9.48	21.17	8.59	4.87	.033*	0.67[†]
GRCS Inability to stop gambling	15.90	11.22	23.61	6.38	10.63	.002*	0.85[†]
GRCS Interpretative control/bias	13.34	7.57	17.90	6.34	4.61	.038*	0.65[†]
GRCS Total	65.41	36.36	95.73	29.87	9.79	.003*	0.91[†]
	Men-Spain (n=226)		Men-USA (n=80)		F _(df=1/300)	p	d
	Mean	SD	Mean	SD			
SOGS Total	14.37	4.74	12.64	3.61	6.59	.011*	0.41
GRCS Gambling expectancies	12.10	7.37	16.58	6.17	17.42	<.001*	0.66[†]
GRCS Illusion of control	7.70	5.19	11.62	6.46	22.29	<.001*	0.67[†]
GRCS Predictive control	16.33	8.56	21.05	6.49	15.12	<.001*	0.62[†]
GRCS Inability to stop gambling	16.78	8.42	19.51	8.00	4.72	.030*	0.33
GRCS Interpretative control/bias	13.38	7.12	16.71	5.34	10.81	.001*	0.53[†]
GRCS Total	66.28	30.18	85.42	25.94	18.76	<.001*	0.68[†]

Note. SD: standard deviation df: degrees of freedom.

*Bold: significant comparison.

[†]Bold: effect size into the medium/moderate (|d|>0.50) to large/high range (|d|>0.80).