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Abstract

Objective: The purpose of this study is to explore the effect of sex as a moderator variable for gambling and clinical profiles in a large sample of Spanish treatment-seeking patients for pathologic gambling (PG). Method: Clinical and personality profiles were compared between 143 male and 143 female pathologic gamblers who sought consultation at a specialized hospital unit. Multiple regressions explored the incremental predictive accuracy of sex on PG severity in consideration of sociodemographic and psychologic characteristics. Results: Men gambled most frequently using slot machines and lotteries, spent more money, and had most arguments with family and friends. Although the age of onset of PG was 7.1 years higher for females, the severity was equal for both sexes. Women evidenced more general psychopathology, with higher mean scores in all the Symptom ChekList-90 items scales (except for hostility and psychoticism), and had significantly higher scores for harm avoidance and lower scores for self-directedness than the male group. However, sex alone did not obtain a significant incremental validity for PG severity. Conclusions: These results may provide guidance for obtaining accurate diagnostic information about PG, properly identifying patients with specific needs and planning sex-specific targets.

## 1. Introduction

Pathologic gambling (PG), included as an impulse control disorder not otherwise specified in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV) [1], is characterized by a failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others.

Gambling has traditionally been viewed as a male leisure activity. One culturally based explanation is related to the social acceptance of this form of entertainment. However, epidemiologic studies aimed at valuing differences by sex showed that regular gambling patterns are more prevalent in men; rates of PG are double for males [2-10]. However, there is evidence that, similar to other addictive behaviors such as alcoholism and drug dependence, gambling problems have increased among women in recent years [11-13]. Available data on the etiology and treatment of PG have involved predominantly male subjects [14,15]. Some authors found that the proportion of males that had been seeking treatment in the Unites States was about 86% [16]. In Spain, in a recent study conducted in our hospital, the percentage of women on a professional treatment program was 9.8% [17]. There are also differences by sex in the course of the disorder: women usually report less duration between the age of onset of the disorder and their own perception of the problem [5,12,18-21]. Women also report different risk factors for the origin and persistence of the disorder: gambling is used for regulating negative emotional states associated with life events, dissatisfaction, and frustration [6,22,23].

### 1.1. Sex and clinical variables

One of the main differences in the gambling behaviors of men and women is the type of gambling that generates the addiction [3,5,19,22,24,25]. Most researchers suggest that women prefer nonstrategic games, such as slot machines and bingo, whereas men tend to choose strategic gambling, such as sport betting and cards, and especially those with high levels of sensation seeking [19,26,27]. However, some studies do not emphasize this distinction based on sex and found that women reported bingo as their principal gambling problem and men reported slot machines [24,28,29].

Regarding the age of onset, men begin to gamble during their youth. A strong association has been found between an early onset disorder as well as psychosocial problems in treatment-seeking adult pathologic gamblers [30], particularly substance use and depressive disorders [31]. Some studies also indicate that the age of onset is higher for women, whereas the addiction is quicker than for men [3,18,21,24,25,32].

Contradictory results have been published regarding the age of advice for consultation. Although some studies indicate that women are older when they seek help [19,25,26], others suggest the opposite [7], and some do not find differences for sex [21]. Petry [33] found that older pathologic gamblers that used professional psychiatric services were usually women, began the disorder in adult life, and had the most financial problems. However, women also reported less antisocial and legal problems [3,18,24,34].

### 1.2. Sex and psychopathology

Pathologic gambling is also related to significant psychiatric comorbidity [35,36], and a positive association has been found between the presence of comorbidities in axes I and II and the rapid advance of the disorder [21]. Some researchers did not find differences in terms of sex between PG and comorbidities [24], but others suggested that women had a higher risk of other psychiatric disorders, such as mood disorders [37–39], generalized anxiety, alcohol dependence, and use and abuse of drugs [40]. Some authors, on the contrary, have associated the use of alcohol, tobacco, and drugs especially to men [41,42].

### 1.3. Sex and personality traits

Personality studies have found higher levels of sensation seeking or impulsivity [43,44] and low self-directedness in PG [45], even when compared with other clinical groups or healthy controls [46]. Some sex-specific differences were also observed; namely, women with PG displayed higher harm avoidance and cooperativeness than control women, whereas men with PG reported higher reward dependence and persistence than control men [17].

Finally, most studies that explored differences in gambling behaviors because of sex have been carried out in community populations. There have been few studies of disordered patients, and these usually include small samples. This study included a large sample of treatment-seeking pathologic gamblers who attended a specialized unit at a hospital in Barcelona, Spain.

### 1.4. Aims of the study

The specific goals of this research were 3-fold: (a) to assess clinical and psychopathologic differences between females and males with PG, (b) to analyze differential personality profiles in PG when considering sex, and (c) to assess the incremental predictive accuracy of sex on the severity of the disorder in consideration of other socio- demographic and psychometric characteristics.

## 2. Method

### 2.1. Participants

The total sample comprised 286 Spanish pathologic gamblers admitted during January 2003 and August 2007 to our pathological gambling unit. One hundred forty-three were female, and they constituted all of the women that were consecutively admitted to the unit requesting treatment because of their problems and impairment due to the disorder. The 143 males with PG were selected at random from a larger pool of patients catered for during the same period (total number of males 689) at our Unit.

The ethics committee of our institution approved this study, and informed consent was obtained from all participants.

2.2. Measures

South Oaks Gambling Screen (SOGS) [47] was used to assess cognitive, emotional, and behavioral aspects related to PG. This scale includes 33 individual items, and the total score ranges from 0 to 20 (higher values are indicative of worse psychopathologic states). We used the Spanish version of the questionnaire [48], which has demonstrated adequate psychometric properties. The Cronbach α in the present sample was very good (.90).

Diagnostic questionnaire for pathologic gambling [49] is a brief questionnaire that assesses the concrete diagnostic criteria for PG according to DSM-IV [50]. It has demon- strated good internal consistency reliability and convergent validity. In this study, we used the total score, obtained as the sum of present criteria reported by each patient. The Spanish version was used. It has satisfactory psychometric properties [51]. The Cronbach α value in the present sample was satisfactory (.79).

Temperament and Character Inventory—Revised (TCI-R) [52] assessed personality traits according to 7 general dimensions: harm avoidance, novelty seeking, reward depen- dence, persistence, self-directedness, cooperativeness, and self-transcendence. The scales have demonstrated adequate reliability-validity in the Spanish population [53]. Cronbach α values in the present sample were acceptable and ranged from 0.73 (novelty seeking scale) to 0.88 (persistence scale).

Symptom ChekList-90 items—Revised (SCL-90-R; [54,55]) was used to score current psychologic distress and psychopathology in 9 primary dimensions: somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The 3 global indices of distress obtained through all the items were also used: Global Severity Index, Positive Symptom Distress Index (PSDI) and positive symptom total. This questionnaire has demonstrated adequate psychometric properties in the Spanish population [56]. Cronbach α values in the present sample were satisfactory or excellent (0.78 for paranoid ideation to 0.91 to depression).

Additional demographic, clinical, and sociofamiliar vari- ables related to gambling were measured using a semistruc- tured clinical interview, described elsewhere [29,57].

2.3. Procedure

On their arrival, patients were assessed by experienced psychologists and psychiatrists through a semistructured face-to-face interview that focused on different aspects of gambling behavior. The patients then individually filled in all of the questionnaires included in the study before they started any therapy at our unit. 2.4. Statistical analysis

Analyses were carried out through SPSS version 15.0.1 (SPSS, Chicago, Ill) for Windows. First, PG profiles measured with the SOGS items were obtained and compared for men and women through $\chi 2$ tests. Because of the multiple statistical comparisons, Finner's correction was applied [58]. Odds ratios (ORs) valued the association of each attitude toward gambling and sex, and effect sizes for proportions based on Cohen's d [59] estimated the clinical differences. These effects were defined as the standardized difference between both proportions, and the results were interpreted as small if d values were lower than 0.2, medium if d values ranged between 0.2 and 0.5, and large if d values were higher than 0.5 [60].

Second, independent clinical and psychometric profiles for men and women were obtained and compared. t Tests were used with quantitative psychologic features and $\chi 2$ procedures with categorical characteristics, with Finner's correction. Comparisons for TCI-R and SCL-90-R measures were carried out with T-scores. Clinical differences were valued with 95% confidence intervals (CIs) for mean differences and with effect sizes based on Cohen's d (standardized difference between both means).

Multiple regressions were then used to value the incremental predictive accuracy of sex on the PG severity. Independent variables (ENTER procedure) were sociodemo- graphics and clinical measures and TCI-R T-scores. South Oaks Gambling Screen total score and total DSM-IV criteria were the dependent variables. Because of the differences in the relationships between TCI-R scores and psychologic state of patients depending on sex, the significant interactions between each individual TCI-R score and sex were included in the initial models too. As categorical predictors, dummy variables were created by selecting one category as a reference. First, all of the variables, except sex, were entered

into the regression, and then, sex effect was incorporated. The global predictive accuracy of complete regressions was obtained using the R2 coefficient and the specific contribution of sex with the change in R2. The adjustment of the final models was assessed using the Shapiro-Wilks test [61], valuing the normality of residuals.

## 3. Results

### 3.1. Sociodemographic characteristics of the sample

Most subjects had primary (60.1%) or secondary studies (36.6%) (P = .121 for sex comparison). Fifty percent of patients were married or lived with a partner, 30% were single, and 20% were separated or divorced (comparison by sex: P = .090). Of the men and women, 28.7% and 47.1% were unemployed (P = .001), respectively. Male pathologic gamblers reported higher monthly means for personal (1257 euros for men and 719 euros for women, P b .0005) and family income (2115 euros for men and 1558 euros for women, P b .0005), and they were younger when they sought consultation (mean age was 41.4 years for men and 49.4 years for women., P b .0005).

### 3.2. Comparison of gambling behavior by sex

Table 1 includes differences for sex on each SOGS item, which valued the type of gambling behavior. Several statistical differences were found: slot machine use was more frequent in males than in females, and men spent more money on each session (at least 300 euros in 51.7% of men vs 39.2% of women). In addition, men entered lotteries more frequently. Effect sizes were small or moderate in most attitudes toward gambling, and the highest value was found for using slot machines on a weekly basis (Cohen's d higher than 0.50).

### 3.3. Comparison of clinical profiles by sex

Table 2 includes quantitative clinical characteristics across males and females. There were no differences in terms of the duration of the gambling, SOGS total score, and total DSM- IV reported criteria. However, the age of onset of the disorder was more than 7 years higher in females than in males. 3.4. Comparison of psychopathology and personality traits by sex

Table 2 also presents psychometric characteristics across both sexes. With regard to current psychologic distress, women evidenced a poorer psychopathologic state than men, with higher mean scores in all the SCL-90 scales except for the T-scores of hostility and psychotic scales. In relation to personality traits (measured by TCI-R scores), results indicate that women obtained higher means in the harm avoidance scale and lower means in the self-directedness scale. The highest effect size values were obtained in age of onset, SCL-90 PSDI, and TCI-R self-directedness scores (Cohen's d above 0.50). The lower effect sizes were for SOGS total score and TCI-R cooperativeness and self- transcendence scales (Cohen's d close to 0).

Regarding substance use, no statistical differences between the sexes were found in the use of tobacco (68.4% for women and 77.3% for men, P = .118), alcohol abuse (10.6% for women and 14.7% for men, P = .340), or abuse of other drugs (7.1% for women and 10.1 for men, P = .409). 3.5. Incremental predictive accuracy of sex

Initial models for predicting the main variables related to PG (SOGS score and total DSM-IV criteria) included interaction terms between sex and each of the 7 general personality traits (TCI-RT-scores). No significant interaction was found, indicating that the contribution of these personality dimensions to the analyzed criteria is analogous for men and women. Table 3 shows the final models, removing the interaction terms. Sex was predictive of neither the SOGS score nor the total DSM-IV criteria reported by

patients. Regarding the contribution of personality traits, patients with higher scores for the novelty seeking scale also obtained higher scores for the SOGS scale and a higher number of DSM-IV criteria. Moreover, lower values for the self-directedness scale obtained higher SOGS scale scores, and being employed decreased the number of DSM-IV criteria. Adjustment of models was correct (residuals normally distributed), and global predictive capacity was good (R2 was 0.29 for SOGS score criterion and 0.32 for DSM-IV total criteria). The incremental validity of sex on both criteria, considering the set of variables analyzed, was not significant (R2 = 0.001 in both models).

## 4. Discussion

We examined differences in pathologic gamblers based on sex in a clinical sample of consecutively admitted individuals with PG. Our results showed that although gambling profiles are quite similar for disordered men and women, psychopathologic profiles and some specific personality traits vary across sex.

### 4.1. Gambling behavior type by sex

One of the main findings was that the type of gambling behavior is associated with sex. Whereas men play more slot machines and lotteries, women play more bingo. This result is in concordance with previous reports in Spain [24,29,62], where it has been shown that slot machine gambling and lotteries were the most prevalent gambling behaviors, especially in men. This result evidenced some cultural bounding differences because of the fact that slot machines and entering lotteries on a weekly basis is a widespread and very popular practice in Spain [28,63], in comparison with other countries [64]. Besides the abovementioned cultural factors, some reports suggest that slot machines are one of the most potentially addictive forms of gambling, and therefore, men might be more vulnerable [65-67]. In contrast, females engaged more frequently in bingo. Again, besides some cultural factors (bingo being socially accep- table in Spain), as suggested in previous studies [5,32], the bingo atmosphere has been described as more suitable to women than other gambling options (comfortable situation and optimal strategy for escaping from problems and isolation and more) [11,19,21,22,26].

4.2. Clinical variables by sex

The second main finding was that men with PG, although they presented similar clinical features with their female counterparts, showed some specific clinical characteristics. Confirming previous studies [26,68], we observed higher betting amounts and, therefore, more arguments within the family in males than in females. This finding might be related again to some Spanish-specific sociocultural factors, where women generally have lower salaries and incomes than males, and therefore, their accessibility to other sources of money might be more restricted [15,18,21].

In addition, according to previous studies [9,18,21,22, 24,33], females were found to have an older age of onset than males. Several studies were previously described, which justify this finding, from sociocultural aspects [4] to psychopathologic [31,69] or neurobiologic factors [70-74].

It could be suspected that clinical differences between sexes are due to the different gambling profiles. However, we have estimated the association between gambling subtypes and the main psychologic measures, and no clinical differences were observed. This assures that relations due to sex are not confused by the differences in choices of forms of gambling.

4.3. General psychopathology and personality traits by sex

Regarding psychopathology, the third main finding was that women showed higher general psychopathology than men. This result might indicate that women, with higher general psychopathology (namely mood and anxiety dis- orders), more frequently use heir gambling behavior as a strategy to ease their symptoms. This is in accordance with some authors [75] who observed that being female was associated with gambling being a way to escape from negative emotions. Along similar lines, several studies suggested that gambling might be used to regulate negative emotional estates associated with life events, dissatisfactions, and frustrations [19,23,29,32,76,77].

On the other hand, some specific personality traits were found to be sex specific (namely, higher harm avoidance in women with PG). Harm avoidance reflects a tendency toward shyness, passive-avoidant behaviors, and worry in anticipation of possible danger. Self-directedness is a measure of responsibility for one's own decisions, avail- ability of coping resources, self-esteem, and efficacy. As suggested in previous reports, this result might be related to a premorbid depressive personality traits [78] and higher comorbidity with affective disorders in female PG [37,79]. According to previous reports [17,24], female PG also shows lower levels of self-directedness, which might be related to poorer prognosis.

According to previous reports [80,81], we found that both male and women PG have equal rates in the use of tobacco, alcohol abuse, and the abuse of other drugs. However, other studies did not support our finding for alcohol and drug abuse [82].

4.4. Predictive values of sex

The last main finding was that sex did not present an incremental predictive accuracy for PG severity once we had considered other sociodemographic characteristics and personality traits. This finding agrees with studies that observed that to understand gambling patterns, sex is less informative than personal and clinical gambler profiles [11].

### 4.5. Limitations

One limitation of this study was the small subsample sizes used to compare gambling subtypes. Also, the assessment procedures used did not allow us to evaluate either specific psychopathologic or comorbid disorders in depth. Future research could expand upon these results by using long- itudinal designs addressing the potential mediating role of sex in the clinical course of PG. Furthermore, the evaluation of sex may be enhanced by the inclusion of biologic and genetic indices in adequately powered studies.

### 4.6. Contributions

One major contribution of this study is the choice of sample. We have assessed and compared clinical, psycho- pathologic, and personality profiles of a large group of PG individuals who were cared for consecutively, both males and females. In summary, although females and males presented similarly severe PG, some sex-specific clinical and psychopathologic characteristics, but also specific person- ality traits, were found in PG individuals. According to our results, clinical practice in females with PG should take into account the specific psychopathologic and personality traits. Also, it would be desirable to pay special attention to the presence of depressive symptoms and specific personality traits that may trigger or maintain the gambling behavior. In those female cases, where one of the potential functions of the gambling behavior is to escape from problems, a combination of psychologic with pharmacologic therapy might be indicated.

The results obtained in our research may provide guidance for obtaining accurate diagnostic information about PG in both sexes (men and women), properly identifying patients with specific needs and planning the required preventive and specific therapy measures [83,84].

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Table 1

| | Percentage (%) of positive answers | | Effect size | Comparison of percentages | | | |
|---|---|---|---|---|---|---|---|
| | Females | Males | | $P^a$ | OR | 95% CI (OR) | |
| *1a. Playing cards: every week* | 28.8 | 39.3 | 0.22 | .280 | 1.60 | 0.97 | 2.64 |
| *1b. Playing horse races: every week* | 1.4 | 2.9 | 0.10 | .610 | 2.01 | 0.36 | 11.2 |
| *1c. Playing sports: every week* | 0.7 | 1.4 | 0.07 | .698 | 2.00 | 0.18 | 22.3 |
| *1d. Playing numbers-lotteries: every week* | 81.3 | 93.6 | 0.38 | .032 | 3.37 | 1.52 | 7.50 |
| *1e. Playing casino: every week* | 15.2 | 24.3 | 0.23 | .280 | 1.79 | 0.98 | 3.27 |
| *1f. Playing bingo: every week* | 67.1 | 56.6 | 0.22 | .280 | 0.64 | 0.39 | 1.04 |
| *1g. Market inversions: every week* | 4.3 | 5.8 | 0.07 | .698 | 1.34 | 0.45 | 3.98 |
| *1 h. Playing slot machines: every week* | 80.1 | 97.2 | 0.56 | <.001 | 8.61 | 2.93 | 25.3 |
| *1i. Other bets: every week* | 5.0 | 10.0 | 0.19 | .327 | 2.10 | 0.82 | 5.36 |
| *2. Amount of money spent: ≥300 euros* | 39.2 | 51.7 | 0.25 | .242 | 1.67 | 1.04 | 2.66 |
| *3. Family antecedents of gambling* | 31.5 | 26.3 | 0.11 | .574 | 0.78 | 0.45 | 1.33 |
| 4. Going back to win back lost money | 91.5 | 92.3 | 0.03 | .865 | 1.10 | 0.47 | 2.58 |
| 5. Claimed winning when loosing | 36.2 | 37.3 | 0.02 | .867 | 1.05 | 0.65 | 1.70 |
| 6. Problem recognition | 95.8 | 93.0 | 0.12 | .558 | 0.59 | 0.21 | 1.66 |
| 7. Gambling more than planned | 91.6 | 93.7 | 0.08 | .659 | 1.36 | 0.56 | 3.35 |
| 8. Being criticized | 70.9 | 73.2 | 0.05 | .749 | 1.12 | 0.67 | 1.89 |
| 9. Feeling guilty | 95.1 | 95.1 | 0.00 | .989 | 0.99 | 0.34 | 2.91 |
| 10. Unable to stop gambling | 88.8 | 88.1 | 0.02 | .870 | 0.93 | 0.45 | 1.93 |
| 11. Hiding signs of gambling | 68.3 | 71.3 | 0.07 | .698 | 1.15 | 0.70 | 1.91 |
| *12. Discussions with family/friends* | 77.1 | 86.9 | 0.26 | .242 | 1.97 | 1.03 | 3.79 |
| 13. Discussions and fights | 68.2 | 73.6 | 0.12 | .572 | 1.30 | 0.76 | 2.23 |
| 14. Borrowing money and not paying back | 44.7 | 49.7 | 0.10 | .610 | 1.22 | 0.77 | 1.95 |
| 15. Skipping school-work because of gambling | 44.0 | 46.5 | 0.05 | .749 | 1.11 | 0.69 | 1.77 |
| 16a. Money from home | 62.2 | 46.9 | 0.31 | .095 | 0.53 | 0.33 | 0.86 |
| 16b. Money from couple | 29.4 | 23.8 | 0.13 | .545 | 0.75 | 0.44 | 1.27 |
| 16c. Money from family | 42.7 | 33.6 | 0.19 | .327 | 0.68 | 0.42 | 1.10 |
| 16d. Money from banks | 50.3 | 51.0 | 0.01 | .913 | 1.03 | 0.65 | 1.63 |
| 16e. Credit cards | 46.2 | 57.3 | 0.22 | .280 | 1.57 | 0.98 | 2.50 |
| 16f. Money from moneylender | 10.5 | 8.4 | 0.07 | .692 | 0.78 | 0.35 | 1.73 |
| 16g. Money from financial papers | 2.8 | 1.4 | 0.10 | .610 | 0.49 | 0.09 | 2.73 |
| 16h. Money from property sales | 11.9 | 7.0 | 0.17 | .369 | 0.56 | 0.25 | 1.26 |
| 16i. Money from falsified checks | 2.8 | 2.1 | 0.05 | .760 | 0.74 | 0.16 | 3.39 |
| *16j. Money from credit account at casino* | 1.4 | 0.0 | 0.17 | .369 | – | – | – |

Table 2

| | Mean, SD | | | | Effect size | *t* Test comparison | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Females | | Males | | | *P*[a] | MD | 95% CI (MD) | |
| Age of onset (y) | 42.19 | 12.6 | 35.08 | 12.6 | 0.54 | <.001 | 7.11 | 3.92 | 10.3 |
| Duration of gambling (y) | 6.75 | 6.60 | 5.79 | 5.70 | 0.16 | .297 | 0.96 | −0.60 | 2.52 |
| SOGS: total score | 10.19 | 3.26 | 10.1 | 3.19 | 0.03 | .826 | 0.09 | −0.66 | 0.84 |
| Total *DSM-IV* criteria | 7.34 | 1.88 | 6.98 | 2.08 | 0.18 | .215 | 0.36 | −0.13 | 0.86 |
| SCL: somatization | 60.06 | 11.44 | 55.06 | 11.65 | 0.42 | .005 | 5.00 | 2.01 | 7.99 |
| SCL: obsessive-compulsive | 60.53 | 10.54 | 55.37 | 11.92 | 0.45 | .003 | 5.16 | 2.27 | 8.06 |
| SCL: interpersonal sensitivity | 61.04 | 11.59 | 56.13 | 12.69 | 0.39 | .007 | 4.90 | 1.75 | 8.06 |
| SCL: depressive | 63.53 | 10.59 | 59.36 | 13.00 | 0.34 | .016 | 4.17 | 1.13 | 7.21 |
| SCL: anxiety | 60.63 | 10.60 | 56.53 | 12.20 | 0.35 | .016 | 4.10 | 1.13 | 7.07 |
| SCL: hostility | 54.46 | 13.28 | 52.02 | 13.70 | 0.18 | .233 | 2.44 | −1.05 | 5.94 |
| SCL: phobic anxiety | 54.28 | 13.36 | 48.92 | 14.34 | 0.38 | .010 | 5.36 | 1.77 | 8.95 |
| SCL: paranoid ideation | 58.37 | 12.23 | 52.79 | 13.98 | 0.41 | .005 | 5.59 | 2.21 | 8.96 |
| SCL: psychotic | 62.85 | 11.62 | 59.35 | 13.45 | 0.27 | .055 | 3.50 | 0.23 | 6.77 |
| SCL-90-R: Global Severity Index score | 62.76 | 10.86 | 58.49 | 13.05 | 0.35 | .016 | 4.27 | 1.14 | 7.40 |
| SCL-90-R: positive symptom total score | 63.76 | 10.78 | 60.29 | 12.75 | 0.29 | .044 | 3.47 | 0.39 | 6.54 |
| SCL-90-R: PSDI score | 56.60 | 11.39 | 50.41 | 11.04 | 0.53 | <.001 | 6.19 | 3.28 | 9.09 |
| TCI-R: novelty seeking | 59.68 | 11.09 | 58.58 | 10.29 | 0.10 | .505 | 1.10 | −1.69 | 3.89 |
| TCI-R: harm avoidance | 58.02 | 10.63 | 54.57 | 10.43 | 0.32 | .027 | 3.45 | 0.70 | 6.20 |
| TCI-R: reward dependence | 46.65 | 10.36 | 48.37 | 12.56 | 0.15 | .318 | −1.72 | −4.75 | 1.32 |
| TCI-R: persistence | 47.95 | 12.09 | 48.92 | 10.36 | 0.09 | .570 | −0.97 | −3.89 | 1.95 |
| TCI-R: self-directedness | 33.10 | 11.85 | 39.31 | 12.45 | 0.50 | .001 | −6.21 | −9.39 | −3.03 |
| TCI-R: cooperativeness | 45.87 | 12.12 | 45.78 | 11.59 | 0.01 | .953 | 0.09 | −3.00 | 3.19 |
| TCI-R: self-transcendence | 52.80 | 10.50 | 52.34 | 10.71 | 0.04 | .776 | 0.46 | −2.31 | 3.23 |

Table 3

| | | SOGS score | | | | | Total *DSM-IV* criteria | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | $\beta$ | *P* | 95% CI | | B | $\beta$ | *P* | 95% CI | |
| Sex | | −0.24 | −.038 | .688 | −1.40 | 0.92 | .17 | .043 | .652 | −0.58 | 0.92 |
| Age (y) | | 0.02 | .074 | .655 | −0.07 | 0.11 | −0.04 | −.229 | .170 | −0.09 | 0.02 |
| [a]Studies level | Primary | 1.16 | .191 | .470 | −2.01 | 4.32 | 1.56 | .409 | .119 | −0.41 | 3.52 |
| | Secondary | 1.85 | .304 | .240 | −1.25 | 4.94 | 1.77 | .462 | .072 | −0.16 | 3.69 |
| [a]Marital status | Married | −0.01 | −.001 | .991 | −1.26 | 1.24 | −0.10 | −.026 | .803 | −0.89 | 0.69 |
| | Separated/divorced | 0.22 | .029 | .768 | −1.26 | 1.71 | −0.12 | −.026 | .794 | −1.04 | 0.80 |
| Employment status | | −0.58 | −.086 | .311 | −1.72 | 0.55 | −0.76 | −.179 | .039 | −1.48 | −0.04 |
| Own income (euros) | | 0.00 | .194 | .076 | 0.00 | 0.00 | 0.00 | .195 | .074 | 0.00 | 0.00 |
| Family income (euros) | | 0.00 | −.119 | .228 | 0.00 | 0.00 | 0.00 | .087 | .379 | 0.00 | 0.00 |
| Age of onset (y) | | −0.03 | −.103 | .514 | −0.11 | 0.05 | 0.02 | .149 | .343 | −0.03 | 0.07 |
| Novelty seeking | | 0.06 | .229 | .019 | 0.01 | 0.12 | 0.05 | .283 | .004 | 0.02 | 0.08 |
| Harm avoidance | | 0.00 | .008 | .926 | −0.06 | 0.05 | 0.01 | .063 | .496 | −0.02 | 0.05 |
| Reward dependence | | 0.01 | .050 | .635 | −0.04 | 0.07 | 0.00 | .005 | .960 | −0.03 | 0.03 |
| Persistence | | 0.04 | .156 | .082 | −0.01 | 0.09 | −0.01 | −.049 | .584 | −0.04 | 0.02 |
| Self-directedness | | −0.09 | −.341 | .005 | −0.14 | −0.03 | −0.03 | −.220 | .071 | −0.07 | 0.00 |
| Cooperativeness | | 0.02 | .067 | .569 | −0.04 | 0.08 | 0.01 | .057 | .628 | −0.03 | 0.05 |
| Self-transcendence | | −0.04 | −.141 | .144 | −0.09 | 0.01 | 0.03 | .172 | .075 | 0.00 | 0.06 |
| Total $R^2$ (change $R^2$ for sex) | | 0.292 (.001) | | | | | 0.315 (.001) | | | | |