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Relapse Prevention in the Treatment of Slot-Machine Pathological Gambling: Long-Term Outcome

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The aim of this paper was, on the one hand, to determine the efficacy of stimulus control and exposure with response prevention in stopping pathological gambling and, on the other hand, to test the comparative effectiveness of two therapeutic modalities (individual and group) for relapse prevention, relative to a control group, in order to maintain abstinence. The sample consisted of 69 patients selected according to *DSM-IV* criteria. At the first part of the study, a one-group design with repeated measures of assessment (pre- and posttreatment) was used. At the second part, a multigroup experimental design with repeated measures (pretreatment, posttreatment, and 1-, 3-, 6-, and 12-month follow-up) was used. All treated patients gave up gambling at the end of the first part of the study. In the second part, results related to relapse showed a success rate higher in both individual and group relapse prevention than in the control group. These results raise the necessity of using relapse prevention programs in the treatment of pathological gambling. Implications of this study for clinical practice and future research in this field are discussed.

Pathological gambling is a behavioral disorder that was first classified as a nosological entity with specific diagnostic criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*; American Psychiatric Association, 1980). Currently, pathological gambling is categorized in the *DSM-IV* (American Psychiatric Association, 1994) as an impulse-control disorder. It is a psychological addiction characterized by emotional dependence on gam-

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bling and by a chronic and progressive failure in resisting the impulse to gamble. As a consequence, important alterations occur in the family, social, working, and personal environments of pathological gamblers that interfere with normal functioning in daily life. At the same time, other associated clinical problems are not rare, such as depression, increased risk of suicide, and alcohol abuse (Báez, Echeburúa, & Fernández-Montalvo, 1994; McCormick & Ramírez, 1988).

Pathological gambling is a disorder of great social relevance. According to epidemiological studies in Spain (Becoña, 1993; Irurita, 1996; Legarda, Babio, & Abreu, 1992), the prevalence rate ranges from 1% to 3% of the population, with an additional 3% to 4% of individuals at risk. Those figures are similar to those obtained in other countries (cf. Bland, Newman, Orn, & Stebelsky, 1993; Volberg & Steadman, 1988, 1989). The main therapeutic demand in our environment comes from the slot machine gamblers (Echeburúa, 1992; Echeburúa & Báez, 1994a).

From a clinical point of view, the therapeutic objective in the treatment of pathological gambling, as is the case with most addictive disorders (Echeburúa & Báez, 1994b), is abstinence. As far as the effectiveness of therapy is concerned, there have been few controlled studies. Furthermore, most of the studies refer generally to combinations of techniques in which the effective component cannot always be isolated (Blaszczynski, 1985, 1993).

However, three lines of research can be delineated in the treatment of pathological gambling: *imaginal desensitization*, a variant of systematic desensitization designed to cope with the psychophysiological hyperactivation (cf. McConaghy, Armstrong, Blaszczynski, & Allcock, 1983, 1988; Blaszczynski, McConaghy, & Frankova, 1991); *cognitive restructuring*, justified by the high number of cognitive disorders present in the gamblers (cf. Sylvain & Ladouceur, 1997); and, finally, *in vivo exposure with response prevention* and *control of stimuli*, designed to face the craving for gambling and to increase expectations of self-effectiveness regarding the capacity to control gambling (Echeburúa, Báez, & Fernández-Montalvo, 1994, 1996). According to posttreatment assessments, the results of these techniques have been satisfactory. In some cases, even a rate of 100% abstinence has been reached (cf. Echeburúa et al., 1996). However, as happens in other addictions, a substantial percentage of individuals (around one-third) relapse in the first months after therapy. Therefore, relapse prevention is the main challenge for the treatment of addictive disorders.

However, there is no controlled research on relapse prevention in pathological gambling. Thus, the main goal of this study is to compare the differential effectiveness of two specific kinds of relapse prevention, individual and group modality (with a control group without relapse prevention), based on Marlatt and Gordon's model (1985). All participants, the control group included, were treated in the first phase of the study with control of stimuli and in vivo exposure with response prevention, which, according to some previous studies (Echeburúa et al., 1994, 1996), seems to be the most adequate treatment for the initial cessation of pathological gambling.

The most important target of this study was to implement a strategy to maintain abstinence from gambling in the long term. The main hypotheses were as follows: (a) all patients will give up gambling after being treated in the first phase of the study; (b) patients treated with relapse prevention will improve more than nontreated patients in the long term; and (c) individual modality will be superior to group modality in the second phase.

With respect to measures, because we cannot have objective tests in the assessment of this disorder, self-reports have been used. Nevertheless, data obtained from the patient have been contrasted with information given by the family. In that way, as has been stressed in some studies (Blaszczynski et al., 1991; Lesieur & Blume, 1987), validity is increased.

METHOD

Subjects

The sample for this study consisted of patients who sought treatment at the Pathological Gambling Center of Rentería (Basque Country) during the period from February 1994 to March 1996. According to the criteria for admission to the study, the patients had to (a) meet the diagnostic criteria of pathological gambling according to the *DSM-IV*; (b) have a score equal to or above 4 on the Spanish version (Echeburúa, Báez, Fernández-Montalvo, & Páez, 1994) of South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) in order to prevent false positives; (c) not be suffering from another psychopathological disorder; and (d) gamble primarily with slot machines. The adoption of the last two requirements corresponds to the goal of focusing on "pure" gamblers (unafflicted by other clinical disorders) and on a homogeneous sample regarding the type of gambling involved.

After screening the 104 subjects who came to the therapeutic program for pathological gambling during this period of time, the sample was reduced to 69 subjects (60 men and 9 women). All selected patients gave their informed consent to take part in the study. The main reasons for exclusion from the study of the 35 other gamblers were the following: they suffered from another serious behavioral disorder ($n = 17$) and they gambled in ways other than with slot machines ($n = 14$).

The sample selected ($N = 69$) reported a mean age of 36 years ($SD = 13.7$) and the ratio of men to women (6-7/1) was similar to that in other clinical studies (Echeburúa et al., 1994, 1996; McConaghy, Blaszczynski, & Frankova, 1991; Sylvain & Ladouceur, 1997). The socioeconomic level of the sample was middle and lower class. Gambling behavior is characterized in mean values as being frequent (5 days/week), entailing a considerable amount of money spent (19,000 pts./week, approximately $127 U.S. at current rate of exchange), and involving a substantial amount of time (8 hours/week). Moreover, patients were heavily in debt (mean: 700,000 pts., approximately $4,670 U.S. at current rate of exchange).

Experimental Design

This study had two parts. The method used in the first part was a *one-group design*, with repeated measures of assessment (pre- and posttreatment). Thus, the 69 patients of the sample received the same therapy (stimulus control and in vivo exposure with response prevention). The goal of this treatment, carried out in an individual modality, was to obtain total abstinence of gambling and, in this manner, to pass to the second part of the study: relapse prevention.

At the second part, a multigroup experimental design (with two treatment groups and one control group) with repeated measures (pretreatment, posttreatment, and 1-, 3-, 6-, and 12-month follow-up) was used. Thus, at the end of the first part of the study, once gambling behavior was interrupted, patients were randomly assigned to the three groups. The treatment modalities used were the following: (a) individual relapse prevention; (b) group relapse prevention; and (c) control group with no treatment.

Procedure

Assessment

In the selection phase, an interview based on the diagnostic criteria of the *DSM-IV* and the SOGS were used as screening tests in order to determine which subjects would take part in the study. For ethical reasons, patients who were excluded from the study received therapeutic treatment.

The pretreatment assessment measures were administered to the patients before beginning the initial treatment program. Three 1-hour assessment sessions were carried out with each patient and the content of the therapy was explained to them. When initial therapy was finished, a posttreatment assessment session was carried out in order to establish therapeutic results and to select the patients who would participate in the second part of the study. The requirement for the second part of the study was total abstinence of gambling. The patients who met this criterion were randomly assigned to one of the three modalities. Moreover, this assessment session was the initial assessment of the relapse prevention program. The following evaluations—always in the format of a personal interview—took place when the relapse prevention program was finished and in the 1-, 3-, 6-, and 12-month follow-ups. The control group was assessed at the same times as the experimental groups. All the assessments were conducted by an independent assessor, an experienced clinical psychologist who was unaware of the therapeutic modality in which the patient was involved.

Treatment

The therapist who carried out the assessment and treatment of all of the patients (the second author of this paper) is a clinical psychologist with 5 years of experience in cognitive behavioral treatment of pathological gambling.

Assessment Measures

Interviews

The diagnosis of pathological gambling was made according to *DSM-IV* diagnostic criteria. In addition, a structured interview on gambling history was carried out (45 minutes) in the first assessment, the objective of which was to gather data related to the beginning and subsequent development of the gambling problem.

Assessment of Dependency on Gambling

The assessment tool related directly to pathological gambling was the SOGS, a screening questionnaire composed of 20 items that relate to gambling behavior, loss of control, the sources for obtaining money, and the emotions involved. The range is from 0 to 20. According to Lesieur and Blume (1987), a score higher than 5 (the cutoff point) serves to identify probable pathological gamblers. The 4-week test-retest reliability is .71 and the internal consistency is .97. From the perspective of convergent validity, the correlation with the clinical assessment of pathological gambling, according to the diagnostic criteria of the *DSM-III-R*, is .94, and it is .60 with the assessment by a patient's family member. This tool is used only in the first assessment because it is not a test sensitive to therapeutic change (Echeburúa et al., 1996).

In this study the Spanish version of SOGS was used. This assessment tool has a test-retest reliability of .98 with internal consistency of .94. The convergent validity with *DSM-IV* criteria is .92. The range of the Spanish version is from 0 to 19. A score higher than 4 (the cutoff point) serves to identify probable pathological gamblers (Echeburúa et al., 1994).

Some relevant information about gambling dependent variables was also gathered: the amount of money, the frequency, and the time dedicated weekly to gambling on average. The patient's perception of the seriousness of the frequency, time, and money invested in gambling was also evaluated, along with the frequency of thoughts about gambling and the subjective need to play: This is called the patient's subjective indicator. The scores for each variable vary from 0 (*nothing*) to 4 (*very much*) on a Likert-type scale, and the summed total ranged from 0 to 20. These same questions were asked of patients' families to compare to patient self-report. This is called the family member assessment.

Assessment of Associated Psychopathological Symptoms

In addition to gambling-related measures, other psychopathological indicators habitually associated with gambling were evaluated: depression (BDI), anxiety (STAI), and lack of adaptation to daily life. Tools were used that have been shown to be sensitive to therapeutic change.

The Inadaptation Scale (Echeburúa & Corral, 1987) reflects the extent to which gambling affects different areas of daily life: work, social life, free

time, marital adjustment, and family adjustment. This tool, with 6 items that range from 0 to 5 on a Likert-type scale, is also composed of a global scale which reflects the degree of global inadaptation to daily life. The range of the total scale is from 0 to 30 (the higher the score, the greater the inadaptation). The version used in this study is described in Fernández-Montalvo and Echeburúa (1997).

Therapeutic Modalities

Stimulus control and gradual in-vivo exposure with response prevention. The control of stimuli refers basically to maintaining control of money (only carrying money that is needed; reporting all expenses to a relative; managing income, etc.) and to avoiding *situations or routes of risk* as well as gamblers' friends. As treatment advances, the control of stimuli is gradually faded, except avoiding gamblers' friends.

The gradual in-vivo exposure with response prevention forces the subject to experience the desire to gamble and to learn how to resist this desire in a gradual, more self-controlled way. The aim of systematic exposure to cues and situations of risk is to make the cues lose their power to induce urges and gambling behavior.

These two techniques were used sequentially in an individual therapy format. The control of stimuli can stop gambling behavior, but if planned exposure is not carried out, the probability of relapse in the relatively near future is greater. A detailed diary of the sessions, along with the corresponding homework, is included in Fernández-Montalvo and Echeburúa (1997).

Individual relapse prevention. The first goal of this program is to train the patient to identify high-risk situations for relapse; the second goal is to provide adequate strategies for coping with problematic situations. In this way, the patient learns to identify and to discriminate the risk situations that can lead to an initial lapse to gambling. The usual targeted high-risk situations include social pressure, negative emotional states (e.g., anxiety, depression, anger), and interpersonal conflicts. These three situations are the main risk factors for relapse (cf. Marlatt & Gordon, 1985).

The program also involves confronting patients with specific high-risk situations, as well as an educational intervention about other factors that may contribute to relapse, such as alcohol abuse, irrational expectations about gambling, lack of financial planning, lack of pleasure activities, and so on. Finally, an individualized exposure program for high-risk situations is elaborated. The goal of exposure is to practice the confrontation strategies in a systematic way so as to increase self-efficacy expectations. A detailed diary of the sessions, along with the assigned homework, is included in Fernández-Montalvo and Echeburúa (1997).

Group relapse prevention. The characteristics of this modality (group size ranged from 4 to 7 persons) are the same as the individual modality. The only difference is that duration of sessions is higher than individual modality (2 hours each session) because of the demands of group treatment, specifically

the development of cohesion among group members, discussion of greater variety of situations, and provision of individual attention for each patient.

RESULTS

The total sample was made up of 69 subjects, who proved to have a strong dependency on gambling. The average score on the SOGS was 10.5 (SD = 2.5), with a range from 6 to 15.

In this study therapeutic success was defined as abstinence or the occurrence of only 1 or 2 episodes of gambling during the 12 months following therapy, provided that the total amount of money spent was not greater than a week's worth of gambling in the phase prior to treatment. In the determination of failures, both individuals whose gambling exceeded these criteria and the dropouts were included.

Results of Initial Treatment

All subjects of the sample (N = 69) gave up gambling after receiving the initial treatment (stimulus control and exposure with response prevention) and were thus included in the second part of the study.

Results of Relapse Prevention

Rate of Success and Failure

At the 3-month follow-up, the patients treated in the two experimental conditions showed a rate of success of 91%, higher than that of the patients who belonged to the control group (61%). This difference was statistically significant ($\chi^2 = 9.28$; $p < .01$; Table 1). This difference was maintained at 12-month follow-up. At this time, the two therapeutic groups were equally effective, with a rate of success of 82.6% in the individual treatment and of 78.3% in the group treatment. Both modalities were significantly higher than control group (56%; $\chi^2 = 6.05$; $p < .05$).

TABLE 1
RATE OF SUCCESS AND RESULTS OF CHI-SQUARED IN THE ASSESSMENT CONTROLS (N = 69)

Assessment	Individual Treatment N (%)	Group Treatment N (%)	Control Group N (%)	χ^2
Post.	23 (100%)	23 (100%)	21 (91.3%)	4.11
1 month	22 (95.7%)	21 (91.3%)	17 (73.9%)	5.36
3 months	21 (91.3%)	21 (91.3%)	14 (60.9%)	9.28**
6 months	20 (87%)	20 (87%)	13 (56.5%)	7.97*
12 months	19 (82.6%)	18 (78.3%)	12 (52.2%)	6.05*

* $p < 0.05$; ** $p < 0.01$.

Results of Gambling Dependent Variables and of the Psychopathological Measures

Between-group analysis. The means, standard deviations, and F values of the gambling dependent variables and of the psychopathological measures studied at different times in the assessment are shown in Tables 2 and 3, respectively.

Concerning the gambling variables, there were some significant between-group differences in the subjective indicator and in the family-member assessment. In the case of the subjective indicator, differences began at the 1-month follow-up ($F = 3.90$; $p < .05$) and were maintained up to the 12-month follow-up ($F = 4.05$; $p < .05$). In the case of the family-member assessment, differences were only detected at the 12-month follow-up ($F = 3.80$; $p < .05$). The post-hoc *LSD* test at the 12-month follow-up revealed the superiority of the therapeutic groups with respect to the control group and the lack of differences among the two therapeutic groups.

Concerning the psychopathological measures, the ANOVA revealed significant differences in anxiey and depression, which were maintained up to the 12-month follow-up. The post-hoc *LSD* test, at this assessment, revealed the superiority of the two therapeutic groups for reducing both anxiety and depression and the lack of differences among the two therapeutic groups in both variables.

Within-group analysis. In Tables 4 and 5, F and t values are shown, at each assessment interval, of the ANOVA of repeated measures for the main gam-

TABLE 2
MEANS, STANDARD DEVIATIONS, AND F VALUES OF GAMBLING DEPENDENT VARIABLES

	Individual Treatment Mean (*SD*)	Group Treatment Mean (*SD*)	Control Group Mean (*SD*)	F
Subjective indicator (0–20)				
Pretreatment	1.9 (1.6)	2.2 (1.9)	1.7 (0.9)	0.25
Posttreatment	0.6 (1.3)	0.8 (1.6)	1.5 (3.4)	0.84
1 month	0.4 (1.2)	0.6 (2.3)	3.7 (7.1)	3.90*
3 months	1.0 (4.1)	1.0 (2.7)	4.9 (7.5)	4.10*
6 months	1.1 (4.1)	1.1 (3.5)	5.3 (8.1)	4.05*
12 months	1.5 (4.1)	1.1 (3.5)	5.3 (8.2)	3.53*
Family assessment (0–20)				
Pretreatment	1.7 (2.1)	2.1 (2.1)	1.8 (1.2)	0.29
Posttreatment	1.1 (1.9)	1.4 (1.8)	1.2 (3.2)	0.12
1 month	1.2 (2.2)	1.5 (3.6)	3.7 (6.9)	1.77
3 months	1.2 (4.1)	1.5 (4.1)	4.8 (7.3)	2.95
6 months	1.3 (4.1)	1.8 (3.4)	5.5 (8.3)	2.94
12 months	1.4 (3.8)	1.2 (3.4)	5.4 (8.2)	3.80*

* $p < 0.05$.

TABLE 3
MEANS, STANDARD DEVIATIONS, AND *F* VALUES OF PSYCHOPATHOLOGICAL VARIABLES

	Individual Treatment Mean (*SD*)	Group Treatment Mean (*SD*)	Control Group Mean (*SD*)	*F*
Anxiety (STAI) (0–60)				
Pretreatment	15.3 (12.1)	14.6 (5.2)	15.7 (12.5)	0.06
Posttreatment	7.3 (11.3)	7.1 (3.3)	14.6 (12.1)	4.25*
1 month	5.1 (9.2)	6.1 (5.4)	13.7 (11.5)	5.69**
3 months	5.2 (9.3)	4.3 (5.5)	14.9 (12.1)	8.19***
6 months	4.7 (9.1)	4.4 (7.8)	13.7 (12.4)	5.77**
12 months	4.2 (8.9)	4.2 (8.1)	11.6 (9.3)	4.83*
Depression (BDI) (0–63)				
Pretreatment	8.3 (4.5)	8.1 (4.4)	9.7 (8.1)	0.48
Posttreatment	3.3 (4.6)	4.1 (3.4)	6.1 (8.2)	1.37
1 month	2.6 (3.6)	4.1 (5.7)	6.5 (8.6)	2.06
3 months	2.3 (4.3)	3.1 (4.9)	7.1 (7.9)	3.85*
6 months	1.8 (4.5)	2.8 (5.3)	7.3 (8.2)	4.63*
12 months	2.3 (5.2)	2.6 (5.3)	6.3 (6.6)	3.01*
Inadaptation (EI) (0–30)				
Pretreatment	8.3 (5.8)	9.1 (5.6)	8.2 (6.2)	0.13
Posttreatment	6.1 (4.5)	7.1 (6.1)	6.6 (8.8)	0.10
1 month	4.5 (4.6)	5.4 (6.2)	8.7 (10.1)	1.95
3 months	3.1 (5.9)	3.1 (5.6)	7.5 (9.5)	2.56
6 months	2.5 (5.4)	3.1 (7.1)	7.4 (10.1)	2.42
12 months	3.2 (7.1)	3.1 (7.1)	7.1 (10.2)	1.65

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

bling dependent variables and the psychopathological measures of all of the groups.

In all subjective gambling variables (subjective indicator and family-member assessment) in the two experimental groups, improvement is evident between the pre- and posttreatment phases and throughout the 12-month follow-up. On the other hand, no changes were observed in the control group, except for a tendency to relapse at follow-up.

Concerning the psychopathological variables (anxiety, depression, and inadaptation), a significant improvement was seen between pre- and posttreatment in the two experimental groups. Likewise, these therapeutic results continued, except in inadaptation (which tended to increase), up to the 12-month follow-up. In contrast, the control group evidenced no remission of psychopathological variables.

Dropouts, Therapeutic Failures, and Relapses

The total number of dropouts in all phases of the study was 10, which constituted 14.5% of the subjects who initiated treatment. There were no signifi-

TABLE 4
WITHIN-GROUP COMPARISONS (F AND T VALUES) IN GAMBLING DEPENDENT VARIABLES

	Individual Treatments	Group Treatments	Control Group
Subjective indicator	$F = 2.84$	$F = 5.56$**	$F = 3.80$*
Pre.-Post. t	6.99*** ($^{+++}$)	6.20*** ($^{+++}$)	1.00
Post.-12 months t	1.48	0.60	2.14*
Family assessment	$F = 1.12$	$F = 2.10$	$F = 4.27$*
Pre.-Post. t	3.04 ** ($^{+}$)	4.74 *** ($^{+++}$)	1.00
Post.-12 months t	0.62	0.40	2.34 *

Nominal signification: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Bonferroni for 2 comparisons: $^{+}p < 0.025$; $^{++}p < 0.005$; $^{+++}p < 0.0005$.

cant differences among modalities—not even between the experimental groups and the control group—regarding the point of time during which subjects dropped out of the therapeutic program, though dropout tended to take place within 3 months of follow-up.

Once the differential characteristics of the patients who dropped out of the study were analysed, only anxiety differentiated them significantly ($t = 2.24$; $p < .05$). The mean anxiety of the subjects (when they came to treatment) who dropped out ($M = 39.6$; $SD = 4.50$) was greater than that of those who continued ($M = 29.5$; $SD = 9.89$).

The relapses between posttreatment and the 12-month follow-up affected 10 subjects (14.5% of the sample treated). The relapses took place significantly more often in the control group ($n = 6$) than in experimental groups ($n = 2$ in both individual and group modalities). The total number of thera-

TABLE 5
WITHIN-GROUP COMPARISONS (F AND T VALUES) IN PSYCHOPATHOLOGICAL VARIABLES

	Individual Treatment	Group Treatment	Control Group
Anxiety (STAI)	$F = 22.8$***	$F = 24.4$***	$F = 3.35$*
Pre.-Post. t	4.76*** ($^{+++}$)	6.80*** ($^{+++}$)	1.00
Post.-12 months t	1.75	1.92	1.50
Depression (BDI)	$F = 30.6$ ***	$F = 16.8$***	$F = 3.86$*
Pre.-Post. t	7.07*** ($^{+++}$)	4.97*** ($^{+++}$)	1.00
Post.-12 months t	0.50	1.20	0.11
Inadaptation (Inadaptation Scale)	$F = 8.33$***	$F = 7.24$**	$F = 0.42$
Pre.-Post. t	4.82*** ($^{+++}$)	2.98** ($^{+}$)	1.00
Post.-12 months t	2.15*	2.19*	0.04

Nominal signification: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Bonferroni for 2 comparisons: $^{+}p < 0.025$; $^{++}p < 0.005$; $^{+++}p < 0.0005$.

peutic failures (dropouts and relapses) was 29% (20 subjects) of the initial sample. From a qualitative point of view, most failures appeared to be distributed through the entire follow-up period, but with a notable incidence (65% of the cases) during the first 3 months after therapy. Therapeutic failures were more frequent in the control group ($\chi^2 = 6.05$; $p < .05$).

DISCUSSION

The advantages of this study include the equivalence of the groups in the pretreatment in all evaluative measures, the coherence of the results obtained on the different variables measured, and the homogeneity of the sample and its size. Likewise, the therapeutic success with multiple dependent variables (money, frequency, time, subjective indicator of the patient and family's assessment) was emphasized, and appropriate instruments to assess these domains were included. On the other hand, in this study, in order to avoid an overestimation of the probability of success, the rate of dropouts is included in the calculation of failures, consistent with Blaszczynski's suggestion (1993).

This is the first controlled study of pathological gambling in which a program of relapse prevention is specifically tested. In some studies, relapse prevention is included as an additional component of the treatment of pathological gambling (cf. Bujold, Ladouceur, Sylvain, & Boisvert, 1994; González, 1989; Ladouceur, Boisvert, & Dumont, 1994; Lesieur & Blume, 1991; McCormick & Taber, 1991; Mercadé, González, Pastor, & Aymamí, 1990; Schwartz & Lindner, 1992; Sylvain & Ladouceur, 1997). However, in this kind of multicomponent therapeutic program, it is difficult to isolate the specific importance of relapse prevention, as well as the importance of other components.

Pathological gambling is a disorder that can be treated successfully, in spite of the level of impairment associated with the disorder. In fact, in this study, the control of the stimuli and the in vivo exposure with response prevention reached a rate of 100% abstinence when the intervention was completed. These results match those obtained in a previous study from our group (Echeburúa et al., 1994, 1996), which heightens confidence in this finding. Therefore, the combination of these two techniques can be considered, at this time, a treatment of choice in achieving cessation of gambling behavior as well as improvement in the associated psychopathological variables.

From the perspective of relapse prevention, the results demonstrate the clear superiority of both modalities, without any difference between individual and group format, over the control group. To be exact, at the 12-month follow-up, the control group presents a rate of relapse of 47.8%, despite the fact that every individual was abstinent after receiving the initial treatment. This number is much higher than what was noted in the therapeutic groups (17.4% in the individual form and 21.7% in the group mode). In light of these results, it seems necessary, therefore, to incorporate relapse prevention in the treatment of pathological gambling, with the intention of teaching patients

how to identify the situations with high risk to relapse, as well as adequate strategies to cope with those situations.

The results obtained in the 12-month follow-up of this study are better than those found with other types of therapeutic approaches (cf. Blaszczynski et al., 1991; Echeburúa et al., 1994, 1996; McConaghy et al., 1983, 1988; Sylvain & Ladouceur, 1997). However, apart from effectiveness, an important conclusion of this study regards efficiency. From the point of view of cost-benefits, the possibility of implementing the intervention in a group format saves a great amount of cost, because a greater number of patients can be treated without diminishing the quality of the intervention.

As far as the therapeutic course is concerned, the initial treatment succeeds in bringing rapid improvement in every variable studied, both gambling variables (to which the program is specifically directed) and psychopathological variables. Later, when relapse prevention is applied, improvement continues, although at a slower rate, in both types of variables. These results are stable until the 12-month follow-up. The control group, by contrast, does not increase improvement after initial treatment, but shows a tendency toward deterioration.

Often, the family perceives a patient's changes, both positive and negative, later than the patient perceives them (cf. Table 2). From a cognitive perspective, relatives—habituated to the patient's enduring addiction and often frequent deceptions—are distrustful about improvement and require enough time to change their overlearned perceptions about the gambling dependency of the patient.

The rate of dropout in this study is 14.5% of the total of the sample, which is clearly below the 50% rate reported by Greenberg and Rankin (1982), below the 70% rate in Anonymous Gamblers (Brown, 1987), below the 30% rate in the investigation by Lesieur and Blume (1991), and below the 22% rate reported in Echeburúa et al. (1996). Therefore, we can conclude that the program presented here is perceived as attractive by the patients.

It is not possible to forget that there still exists 19.5% of individuals for whom treatment fails, despite receiving an intervention to prevent relapse. Because of that, a very interesting line of research is the detailed study of therapeutic failures to determine variables that can predict relapse. The treatment of this mental disorder may improve as a result.

Finally, there are some limitations to this study. First, all treated patients are slot-machine pathological gamblers. Although these are the most frequent treatment seekers in clinical samples, they may not be totally representative of the larger population of problem gamblers. Second, gamblers with comorbid psychopathological disorders were not included in the study. These individuals are prevalent in clinical practice. Third, it may be interesting for future research, when comparing individual and group treatment, to balance not only the number of sessions, but also the total amount of time of therapy in both modalities. And fourth, we have focused only on the occurrence of relapse (which is the most relevant variable), not on the severity (e.g., money invested in gambling). This last point deserves more attention in future research.

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