

Group and Individual Change in the Treatment of Drug Addictions: A Follow-up Study in Therapeutic Communities

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The pre-post treatment change of 112 patients in two therapeutics Spanish communities is described. The *Addiction Severity Index* (ASI) was used at intake and at the end of the treatment program. Results of the treatment program were evaluated by applying *composite scores* (CS) of the ASI, and the evolution of each patient was evaluated using the *Reliable Change Index* (RCI). 69.7% of the sample completed treatment, and 30.3% dropped out prematurely. At intake, the percentage of people who could improve in the different areas of the ASI ranged between 35.1% for alcohol consumption and 95.3% for family relationships. At the follow-up, the percentage of subjects who showed significant statistical improvements in the different areas varied between 7.9% in family relations and 66.7% in alcohol consumption. The percentage of patients who deteriorated was less than 10% for all variables. Implications for further research and clinical practice are commented upon.

Keywords: addictions, therapeutic community, secondary outcomes, follow-up.

En este artículo se describe la evolución pre-post tratamiento de una muestra de 112 pacientes atendidos en dos comunidades terapéuticas españolas. La evaluación de la muestra se llevó a cabo con el *Addiction Severity Index* (ASI) tanto al inicio como a la finalización del tratamiento. En el análisis de los resultados del tratamiento se utilizaron las *puntuaciones compuestas* del ASI, y la evolución de cada paciente se valoró con el *Índice de Cambio Fiable* (ICF). El 69,7% de la muestra finalizó el programa de tratamiento, y el 30,3% lo abandonó. En el momento del ingreso, el porcentaje de personas que necesitaba tratamiento en cada área del ASI variaba entre el 35,1% en el consumo de alcohol y el 95,3% en las relaciones familiares. En el seguimiento, el porcentaje de sujetos que mostraba mejorías estadísticamente significativas variaba entre el 7,9% en el área familiar y el 66,7% en el consumo de alcohol. El porcentaje de sujetos que empeoraba era menor del 10% en todas las áreas. Se discuten las implicaciones de estos resultados tanto para posteriores investigaciones como para la práctica clínica.

Palabras clave: adicciones, comunidad terapéutica, beneficios secundarios, seguimiento.

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In recent years, several studies have shown the efficacy of drug dependence treatment within therapeutic communities (Edelen, Miles, Osilla, & Wenzel, 2008; Fernandez-Hermida, Secades-Villa, Fernandez-Ludena, & Marina-Gonzalez, 2002; Fernández-Montalvo, López-Goñi, Illescas, Landa, & Lorea, 2008; Ravndal, Vaglum, & Lauritzen, 2005; Simpson et al., 1997). After completing a treatment program, patients improve significantly in terms of drug use as well as work, health, social functioning, and partner relationships. Clinical practice shows that treatment of addictions produces important changes in all areas to such an extent that these are sometimes referred to as secondary outcomes (Bodin & Romelsjo, 2007).

The overall efficacy of drug dependence treatment is attributed to different factors: a) duration of treatment program; b) modality of applied treatment; c) substance of abuse; c) gender; e) presence of dual pathology (Fernández-Montalvo et al., 2004); f) conclusion or termination of a specific treatment program (Fernandez-Hermida et al., 2002; Fernández-Montalvo et al., 2008); g) presence of relapses during follow-up (Bodin & Romelsjo, 2007; Ravndal et al., 2005); h) consumption of substances after treatment (Bodin & Romelsjo, 2006); and i) a combination of different elements, such as legal situation, job, or type of treatment program (Webster, Staton-Tindall, Duvall, Garrity, & Leukefeld, 2007). However, a focus on these areas may overlook information relevant to the improvement of treatment programs. Not all addiction patients looking for treatment need to achieve improvement in all areas of life. Moreover, in some cases, improvement in a specific area is impossible to achieve because a problem does not exist in that area. Likewise, some patients deteriorate in a particular area after completing the program for reasons independent of the drug use that motivated treatment. In those cases, deterioration is usually masked in group analyses by the improvement of their group mates. These issues complicate the analyses of data regarding intervention programs.

Due to these difficulties, several recent investigations have applied the Reliable Change Index (RCI) (Bodin & Romelsjo, 2007; Currie, Hodgins, Crabtree, Jacobi, & Armstrong, 2003), which was developed to determine the individual clinical significance of treatment effects (Jacobson, Roberts, Berns, & McGlinchey, 1999; Jacobson & Truax, 1991). Research has shown that patients who join different treatment programs do not exhibit difficulties in all important areas of their lives. In fact, when applying the RCI to composite scores of the Addiction Severity Index (ASI) (McLellan, Luborsky, Woody, & O'Brien, 1980), some patients show no need for improvement in certain areas (Bodin & Romelsjo, 2007).

In this study, we present an analysis of a sample of addiction patients who received treatment in Proyecto Hombre (PH) in Spain. PH is the best known and longest

established therapeutic community in Spain. It is a drug-free program available in most regions of the country. It is a secular program and is supported by public resources.

The research was carried out in two therapeutic communities of PH: PH of Navarre and PH of Asturias. The efficacy of both clinical centres has been the object of evaluation, and both communities have demonstrated their efficiency in the treatment of drug dependence (Fernandez-Hermida et al., 2002; Fernández-Montalvo et al., 2008). The main aim of this study was to carry out individual and group evaluations of patients in order to prevent the masking of individual effects in group-level analyses. The RCI and composite scores of the EuropASI (Kokkevi & Hartgers, 1995), the European version of the ASI, were used. This is an important issue, particularly in health-related fields, where outcomes have very relevant implications for the well-being of patients.

Specifically, the objectives were to evaluate secondary outcomes beyond drug use and to analyse data regarding group and individual changes in these secondary domains. Specifically, this study reports on a) composite measures in patients participating in two therapeutic communities; b) the use of the RCI applied to each ASI domain to tease out those people who could improve in each domain; and c) the use of the RCI to determine if any patient deteriorated in each ASI domain.

Methods

Participants

The sample for this study included 112 participants admitted in two Spanish Therapeutic Community programs, PH Navarra ($n = 48$; 42.9%) and PH Asturias ($n = 64$; 57.1%) in order to receive psychological treatment for drug addiction. Participants selected for the sample were required to have been admitted for treatment in the course of the year 2005, be aged between 18 and 65 years, have stayed in treatment for at least 12 months (in order to assure some effect of treatment), and consented to participation after having been thoroughly informed about the study.

The socio-demographic characteristics of the sample are presented in Table 1. As shown in the table, the sample was predominantly masculine (87.5% of the sample were male), aged between 18 and 59 ($M = 33.9$, $SD = 7.2$), and the majority were unmarried (60.7% of the cases).

With regard to drug use, 31.5% of patients used multiple substances. In addition, 18% presented simultaneous abuse of alcohol and other substances, 18% abused cocaine, and 17.1% abused heroin. Other substances showed lower consumption rates. Lastly, from a legal point of view, 27.7% of the sample (31 patients) had pending charges related to drug use.

Table 1
Socio-demographic characteristics of the sample (N = 112)

Variables	Men (n = 98)		Women (n = 14)		Total (N = 112)	
	M (SD)		M (SD)		M (SD)	
Age	34.1	(7.20)	32.5	(7.2)	33.9	(7.2)
Variables	n	(%)	n	(%)	N	(%)
Legal						
On parole/probation	8	(8.2%)	1	(7.1%)	9	(8.0%)
Admission prompted by justice system	19	(19.4%)	0	0	19	(17.0%)
Awaiting charges/trial/sentence	26	(26.5%)	5	(35.7%)	31	(27.7%)
Current marital status						
Married or remarried	18	(18.4%)	2	(14.3%)	20	(17.8%)
Separated or divorced	21	(21.4%)	3	(21.4%)	24	(21.4%)
Never married	59	(60.2%)	9	(64.3%)	68	(60.7%)
Usual living arrangements (past 3 years)						
Living with partner and children	18	(18.4%)	0	0	18	(16.0%)
Living with partner	22	(22.4%)	7	(50.0%)	29	(25.9%)
Living alone	8	(8.2%)	0	0	8	(7.1%)
Living with children only	2	(2.0%)	0	0	2	(1.8%)
Living with friends/roommates	2	(2.0%)	2	(14.3%)	4	(3.6%)
Living with parents or family	27	(27.5%)	4	(28.6%)	31	(27.7%)
Protected environment	12	(12.2%)	0	0	12	(10.7%)
No stable living arrangement	6	(6.1%)	1	(7.1%)	7	(6.2%)
Substance that motivated treatment						
Alcohol	13	(13.4%)	2	(14.2%)	15	(13.5%)
Heroin	15	(15.5%)	4	(28.6%)	19	(17.1%)
Cocaine	18	(18.6%)	2	(14.3%)	20	(18.0%)
Cannabis	1	(1.0%)	0	0.0	1	(.9%)
Hallucinogens	1	(1.0%)	0	0.0	1	(.9%)
Alcohol and other drugs	17	(17.5%)	3	(21.4%)	20	(18.0%)
Poly-consumption	32	(33.0%)	3	(21.4%)	35	(31.5%)

Assessment

The EuropASI interview (Kokkevi & Hartgers, 1995) assesses the need for treatment in the following six areas: a) general medical state; b) labour and economic situation; c) drug use (alcohol included); d) legal problems; e) family and social relationships; and f) psychological state. Scores range from 0 (*no problem*) to 9 (*extreme problem*) in each area, and the cut-off point for each area was 4. The higher the score, the greater is the need for treatment. The Spanish version was used in this study (Bobes, González, Sáiz, & Bousoño, 1996). This version is very similar to the original ASI (McLellan et al., 1980), without significant differences (Bobes et al., 1996).

Composite scores (CS) of the ASI were developed for research purposes; they are arithmetically-based indicators of current (last 30 days) problem severity and range between .00–1.00, with higher values denoting higher degrees of severity. CS are not standardised, so equivalent scores in different problem areas are not indicative of equivalent degrees of problem severity. High internal consistency has been regularly reported for the alcohol, medical, and psychiatric CS, while some studies have reported lower consistency coefficients for the remaining CS (Mäkelä, 2004). The short-term test-retest reliabilities of the ASI severity ratings have been reported to be greater than or equal to .92 for all domains (McLellan et al., 1985).

Treatment

In PH there is a professional staff, and the treatment is based on a mutual-help therapeutic community. Briefly, the goal of treatment is abstinence from drugs and alcohol.

The treatment program comprises three therapeutic phases: reception, residential therapeutic community, and reinsertion. Reception, with an estimated duration of one month, is outpatient-based and aims to enhance the motivation to change and to achieve initial abstinence from both illegal drugs and alcohol abuse. During this phase, patients receive group therapy. The second phase, residential therapeutic community, has an estimated duration of nine months. This phase is inpatient-based and aims to encourage acquisition of behaviours for increasing personal independence and to resolve specific problems to achieve relapse prevention. During this phase, patients receive group and occupational therapy. Finally, the third phase, reinsertion, has an estimated duration of 12 months. It involves a progressive reduction in the intensity of treatment. The main aim of this phase is to achieve social, family, and employment reintegration through individual and group therapy. The amount of time that each patient spends in each phase of treatment is very similar. Successful program completion typically requires approximately 22 months and is attained when a resident completes all three therapeutic phases.

Procedure

A retrospective follow-up design was used to analyse the group and individual outcomes of the therapeutic program. In order to carry out comparisons between groups on a set of variables, as well as to assess individual change, the sample was divided into two groups: treatment completers and dropouts.

Patients in the sample were interviewed with the EuropASI at the beginning of treatment and at follow-up. The average time that elapsed from the point of leaving the program until the follow-up interview was 1 year (range: 9 months–15 months). The interviews were conducted by two trained clinical psychologists and took place in locations chosen by the patients (therapeutic community, patient's home, or social service office). No monetary incentive was offered for participation in the study, and all patients gave their informed consent to participate.

Data analysis

Statistical analyses were carried out with SPSS (version 15.0 for Windows). Descriptive analyses were conducted for all variables. Bivariate analyses were employed using chi-square or *t*-test statistics, depending on the nature of the variables studied. A difference of $p < .05$ was considered significant.

The RCI was used to measure individual change. A clinically significant change in RCI indicates a return to normal functioning within the domain under study and a degree of change that is statistically reliable (Jacobson et al., 1999; Jacobson & Truax, 1991). Taking the test–retest reliability of the measure into account, the RCI can be used to tell whether the observed change is likely to reflect more than fluctuations of an imprecise instrument (Jacobson et al., 1999). We calculated RCI using the formula used by Currie et al. (2003) based on Jacobson & Truax (1991):

$$RCI = (X_2 - X_1) / \{2 [SD (1 - r_{xx})^{1/2}]^{1/2}\}, \text{ where } X_1 \text{ is the pre-treatment score, } X_2 \text{ is the post-treatment score, } SD \text{ is the standard deviation among pre-treatment scores, and } r_{xx} \text{ is the test-retest reliability of the measure under study (Jacobson \& Truax, 1991).}$$

We used the test–retest coefficients for the CS reported in previous studies (Bodin & Romelsjo, 2007; Daeppen et al., 1996).

Results

ASI outcomes

Table 2 shows the group means of the EuropASI-CS at intake and at the one-year follow-up, along with the proportion of individuals with a statistically reliable change within each domain. Group means for eight of the nine CS showed a significant decrease in problem severity; in the medical domain, mean severity was similar at follow-up.

When only those participants who had a baseline problem severity that allowed for a reliable improvement to occur were taken into account, according to Bodin and Romelsjo's (Bodin & Romelsjo, 2007) criteria (i.e., $\geq 1.96 \times S_{\text{Diff}}$ for each measure), the following areas were found to be in need of treatment: family relationships (95.3%; $n = 101$); drug use (92.8%; $n = 103$); economic situation (90.3%; $n = 93$); psychiatric state (85.6%; $n = 95$); job satisfaction (83.2%; $n = 89$); social relationships (81.1%; $n = 90$); medical state (71.2%; $n = 79$); legal problems (55.8%; $n = 62$); and alcohol consumption (35.1%; $n = 39$). With regard to the proportion of participants with a statistically reliable change, the highest rate was found for the alcohol domain, of which the majority had improved (66.7%), followed by the economic domain (59.1%); job satisfaction (46.1%), drug use (39.8%), legal problems (30.7%), medical state (16.5%), social relationships (14.5%), psychiatric state (11.6%) and finally, family relationships (7.9%).

RCI outcomes

The majority of patients who started the program were able to conclude it. While 78 patients (69.7% of the sample) completed it entirely, 34 patients (30.3% of the sample) dropped out prematurely. A comparison of RCI values between completers and drop-outs is presented in Table 3.

Table 2

Group means and proportion of individuals with a statistically reliable change within nine life domains from intake to follow-up (ASI Composite scores)

ASI-CS	Group means (SD)				Proportion with reliable change (%)		
	N	Intake	Follow-up	t	Possible cases	Improvement	Deterioration
Medical	111	.3 (.3)	.29 (.2)	.4	71.2% (n = 79 / 111)	16.5% (n = 13 / 79)	11.9% (n = 11 / 79)
Economic	103	.77 (.4)	.36 (.5)	7.2**	90.3% (n = 93 / 103)	59.1% (n = 55 / 93)	11.8% (n = 11 / 93)
Job satisfaction	107	.39 (.3)	.25 (.3)	4.0**	83.2% (n = 89 / 107)	46.1% (n = 41 / 89)	12.3% (n = 11 / 89)
Legal	111	.25 (.3)	.14 (.2)	4.0**	55.8% (n = 62 / 111)	30.7% (n = 19 / 62)	6.4% (n = 4 / 62)
Alcohol	111	.19 (.21)	.12 (.14)	3.3*	35.1% (n = 39 / 111)	66.7% (n = 26 / 39)	25.6% (n = 10 / 39)
Drugs	111	.18 (.12)	.12 (.14)	10.5**	92.8% (n = 103 / 111)	39.8% (n = 41 / 103)	.9% (n = 1 / 103)
Family	106	.46 (.2)	.22 (.2)	9.6**	95.3% (n = 101 / 106)	7.9% (n = 8 / 101)	--
Social	111	.29 (.2)	.15 (.2)	5.9**	81.1% (n = 90 / 111)	14.5% (n = 13 / 90)	1.1% (n = 1 / 90)
Psychiatric	111	.32 (.2)	.2 (.2)	4.9**	85.6% (n = 95 / 111)	11.6% (n = 11 / 95)	2.1% (n = 2 / 95)

Note: Possible cases = total of patients minus patients without need for improvement

* $p < .01$

** $p < .001$

The percentage of subjects who required improvement in the different EuropASI areas was similar in both groups and greater than 70% of cases in most areas. However, less improvement was possible with regard to legal problems, with only 58.4% in the completers group and 50% in the drop-outs group. For alcohol use, the percentage of cases was 71.4% for completers and 58.8% for dropouts.

With regard to improvement, comparisons between groups showed that even when the percentages were similar (without statistical differences), completers tended to present higher values than dropouts. Areas where this was more conspicuous were economic situation (59.4% in completers, 58.6% in drop-outs), job satisfaction (46.7% in completers, 44.8% in dropouts), and drug use (42.9% in completers, 33.3% in dropouts). Areas with the lowest improvement percentages were psychiatric state (10.9% in completers and 12.9% in drop-outs) and family relationships (7.4% in completers and 9.1% in drop-outs). From a qualitative perspective, it is remarkable that in five areas of the EuropASI, the percentage of subjects who deteriorated was less than 7%, and there were relatively few cases in the remaining four.

On the other hand, an analysis considering gender showed that 72.4% of the men achieved completion, compared to 50% of the women ($n = 7$), with no statistically significant difference ($\chi^2 = 1.9$; $p = .09$) between groups. The percentage of people who improved in both groups was higher than those who deteriorated, and there were no significant differences between groups.

Discussion

This study analysed secondary long-term outcomes obtained in a sample of addiction patients who received treatment in a therapeutic community. Individual and group changes were observed in each of the areas measured by the EuropASI. Composite ASI measurements were used in patients completing two therapeutic communities. Moreover, RCI was applied to each ASI domain to tease out those people who could improve in each domain, as well as to determine if any patient deteriorated in each ASI domain. Our results showed that patients who completed the program obtained a significant reduction in different areas of observed problem behaviour. In fact, the analysis reflects a statistically significant improvement between intake and follow-up in eight of the nine areas evaluated. Only in the medical domain there were no changes. Hypothetically, this fact could be explained by the high prevalence of chronic diseases in patients of this kind, related to drug consumption. These results show the efficacy of the treatment in these therapeutic communities, which had been previously demonstrated using group analyses (Fernandez-Hermida et al., 2002; Fernández-Montalvo et al., 2008).

An innovative aspect of this study was the analysis of the number of patients who needed to improve in specific areas beyond the average scores observed. From this more precise perspective, the percentage of patients able to improve in the specified areas varied widely, between 35.1% in alcohol treatment-related areas and more than 90% in areas related to family relationships (95.3%),

Table 3

Proportion of individuals with a statistically reliable change within nine life domains from intake to follow-up (IRC values)

		Completers	Dropouts	Total
Medical	Possible cases	71.4% (<i>n</i> = 55 / 77)	70.6% (<i>n</i> = 24 / 34)	71.2% (<i>n</i> = 79 / 111)
	Improvement	21.8% (<i>n</i> = 12 / 55)	4.2% (<i>n</i> = 1 / 24)	16.5% (<i>n</i> = 13 / 79)
	Deterioration	12.7% (<i>n</i> = 7 / 55)	16.7% (<i>n</i> = 4 / 24)	13.9% (<i>n</i> = 11 / 79)
Economic	Possible cases	91.4% (<i>n</i> = 64 / 70)	87.9% (<i>n</i> = 29 / 33)	90.3% (<i>n</i> = 93 / 103)
	Improvement	59.4% (<i>n</i> = 38 / 64)	58.6% (<i>n</i> = 17 / 29)	59.1% (<i>n</i> = 55 / 93)
	Deterioration	10.9% (<i>n</i> = 7 / 64)	13.8% (<i>n</i> = 4 / 29)	11.8% (<i>n</i> = 11 / 93)
Job satisfaction	Possible cases	82.2% (<i>n</i> = 60 / 73)	85.3% (<i>n</i> = 29 / 34)	83.2% (<i>n</i> = 89 / 107)
	Improvement	46.7% (<i>n</i> = 28 / 60)	44.8% (<i>n</i> = 13 / 29)	46.1% (<i>n</i> = 41 / 89)
	Deterioration	11.7% (<i>n</i> = 7 / 60)	13.8% (<i>n</i> = 4 / 29)	12.4% (<i>n</i> = 11 / 89)
Legal	Possible cases	58.4% (<i>n</i> = 45 / 77)	50.0% (<i>n</i> = 17 / 34)	55.9% (<i>n</i> = 62 / 111)
	Improvement	31.1% (<i>n</i> = 14 / 45)	29.4% (<i>n</i> = 5 / 17)	30.6% (<i>n</i> = 19 / 62)
	Deterioration	6.7% (<i>n</i> = 3 / 45)	5.9% (<i>n</i> = 1 / 17)	6.5% (<i>n</i> = 4 / 62)
Alcohol	Possible cases	71.4% (<i>n</i> = 55 / 77)	58.8% (<i>n</i> = 20 / 34)	67.6% (<i>n</i> = 75 / 111)
	Improvement	36.4% (<i>n</i> = 20 / 55)	30.0% (<i>n</i> = 6 / 20)	34.7% (<i>n</i> = 26 / 75)
	Deterioration	10.9% (<i>n</i> = 6 / 55)	25.0% (<i>n</i> = 4 / 20)	13.3% (<i>n</i> = 10 / 75)
Drugs	Possible cases	90.1% (<i>n</i> = 70 / 77)	97.1% (<i>n</i> = 33 / 34)	92.8% (<i>n</i> = 103 / 111)
	Improvement	42.9% (<i>n</i> = 30 / 70)	33.3% (<i>n</i> = 11 / 33)	39.8% (<i>n</i> = 41 / 103)
	Deterioration	0.0	3.0% (<i>n</i> = 1 / 33)	3.0% (<i>n</i> = 1 / 33)
Family	Possible cases	93.2% (<i>n</i> = 68 / 73)	100.0% (<i>n</i> = 33 / 33)	95.3% (<i>n</i> = 101 / 106)
	Improvement	7.4% (<i>n</i> = 5 / 68)	9.1% (<i>n</i> = 3 / 33)	7.9% (<i>n</i> = 8 / 101)
	Deterioration	0.0	0.0	
Social	Possible cases	77.9% (<i>n</i> = 60 / 77)	88.2% (<i>n</i> = 30 / 34)	81.1% (<i>n</i> = 90 / 111)
	Improvement	16.7% (<i>n</i> = 10 / 60)	10.0% (<i>n</i> = 3 / 30)	14.4% (<i>n</i> = 13 / 90)
	Deterioration	1.7% (<i>n</i> = 1 / 60)	0.0	1.7% (<i>n</i> = 1 / 60)
Psychiatric	Possible cases	83.1% (<i>n</i> = 64 / 77)	91.2% (<i>n</i> = 31 / 34)	85.6% (<i>n</i> = 95 / 111)
	Improvement	10.9% (<i>n</i> = 7 / 64)	12.9% (<i>n</i> = 4 / 31)	11.6% (<i>n</i> = 11 / 95)
	Deterioration	1.6% (<i>n</i> = 1 / 64)	3.2% (<i>n</i> = 1 / 31)	2.1% (<i>n</i> = 2 / 95)

Note: Possible cases = total of patients minus patients without need for improvement

drug use (92.8%) and economic situation (90.3%). These data are consistent with recent studies showing that not all addiction patients looking for treatment require improvement in all areas of their lives (Bodin & Romelsjo, 2007; Slaymaker & Owen, 2006).

The analysis of patients who improved after completing the program also revealed variation, from 7.9% in family relationships to 66.7% in alcohol consumption. On the other hand, the percentage of patients who deteriorated after completing the program oscillated between an absence of cases in the family area up to 25.6% deterioration in alcohol consumption. These numbers are important because in most publications, these data remain hidden by the group averages presented.

From a clinical perspective as well as for the improvement of different intervention programs, it is important to identify those areas where a program may be less efficient in treating substance dependence. For example, deterioration of family relationships due to consumption of drugs is well-documented. Yet, many patients did not improve as expected after completing the program, as evidenced by this study.

Nevertheless, this study presents some limitations. One issue that should be taken into account is the configuration of the sample itself. It is noteworthy that since only a few women were included in the sample, the obtained results concern mainly male addiction patients. It is true that this is the case in almost all studies about drug dependence

(Fernández-Montalvo, Landa, Lopez-Goñi, & Lorea, 2006; Fernández-Montalvo et al., 2008; López-Goñi, Fernández-Montalvo, Illescas, Landa, & Lorea, 2008), but should nevertheless be taken into account when generalising the obtained results. Another limitation is the heterogeneity of the sample in terms of type of drug use. It may be advisable to analyse the results with a more homogeneous sample. However, this heterogeneity along with the dominant presence of men, corresponds to the reality in the therapeutic communities of PH (Fernandez-Hermida et al., 2002; Fernández-Montalvo et al., 2008), as well as in other drug addiction intervention programs in Spain (Comas, 2006). Additionally, the results obtained in this study focus on patients who have received treatment in a therapeutic community and who have been in treatment for at least 12 months. This should be taken into consideration when applying these results to other types of intervention programs. Lastly, the outcomes obtained in this study could be affected by the low consistency coefficients for certain ASI composite scores (economic, legal or use of drugs, for example) or the time elapsed from discharge to the follow-up interview. These factors must be considered in future studies, as well as reasons for deterioration in certain areas after treatment.

Beyond these limitations, the use of RCI to investigate drug dependence treatment constitutes an important field of research for the improvement of intervention programs. This method considers the needs of each patient and does not assume that every patient requires improvement in every area. By only taking into account areas that are in need of treatment, a more accurate picture of a treatment's efficacy is obtained. The RCI could be used in clinical practice to present comprehensive and quantitatively meaningful information about the functional problems of patients and the outcomes of treatment. This constitutes an important advance in the investigation of the treatment of addiction patients. In addition, this methodology should also be useful with other clinical problems.

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