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Acceptance and Commitment Therapy for drug abuse in incarcerated women

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Abstract

Background: Acceptance and Commitment Therapy is the third wave therapy with the greatest empirical evidence in the treatment of drug abuse. **Method:** Thirty-one women with substance use disorder (SUD) were randomly assigned to two conditions, an intervention based on Acceptance and Commitment Therapy (ACT) and a control group on a waiting list. All participants were assessed three times (before treatment, at the end, and at a six-month follow-up) using urinalysis, the Mini International Neuropsychiatric Interview (MINI), the Addiction Severity Index (ASI-6), the Anxiety Sensitivity Index, and the Acceptance and Action Questionnaire (AAQ-II). **Results:** After 16 ACT intervention sessions, abstinence rates of 27.8% were observed, increasing to 43.8% after six months. The treatment also promoted improvements in other areas, such as reductions in the percentage of comorbid psychopathology and anxiety sensitivity, and the increase of psychological flexibility, which, in general, were not documented in the comparison group. **Conclusions:** Clinical gains were achieved, and we consider ACT to be an effective and appropriate treatment to be applied in the prison context.

Keywords: Acceptance and Commitment Therapy, drug abuse, prison, women, intervention.

Resumen

Terapia de Aceptación y Compromiso para el abuso de sustancias en mujeres encarceladas. **Antecedentes:** la Terapia de Aceptación y Compromiso (ACT) es una de las terapias de tercera generación que cuenta con mayor evidencia empírica en el tratamiento del abuso de sustancias (TUS). **Método:** treinta y un mujeres con TUS fueron asignadas al azar a dos condiciones: un tratamiento de 16 sesiones con base en ACT y un grupo de control en lista de espera. Todas fueron evaluadas en 3 momentos (pre, post y al cabo de seis meses de recibir el tratamiento) mediante analíticas de orina, la Mini International Neuropsychiatric Interview (MINI), el Addiction Severity Index (ASI-6), el Índice de sensibilidad a la Ansiedad y el Cuestionario de Aceptación y Acción (AAQ-II). **Resultados:** tras la intervención, se observó un porcentaje de abstinencia del 27,8% y del 43,8% al cabo de seis meses. La intervención también provocó mejorías en otras áreas, como reducciones en los porcentajes de psicopatología asociada y de sensibilidad a la ansiedad, así como aumento de la flexibilidad psicológica, que, en general, no se documentaron en el grupo de comparación. **Conclusiones:** se discuten estas ganancias clínicas y se ofrece ACT como un tratamiento apropiado para ser dispensado en mujeres reclusas con trastorno por abuso de sustancias.

Palabras clave: Terapia de Aceptación y Compromiso, abuso de sustancias, prisión, mujer, intervención.

There is a lack of Spanish studies in incarcerated drug-dependent female population. The vast majority of studies were descriptive and only provide a demographic profile of women (Cervelló, 2006). Like the international literature, these studies have indicated that, compared with men, incarcerated women had higher rates of substance use disorder (SUD), physical and sexual abuse in childhood and several mental disorders (Grella, Stein, & Greenwell, 2005; Messina, Grella, Burdon, & Prendergast, 2007; Messina, Burdon, & Prendergast 2006; Zlotnick et al., 2008).

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International studies provides more empirical data of the treatment of SUD in incarcerated females. Several studies have focused on the efficacy of cognitive-behavioral therapy (CBT) versus other interventions (Twelve-step facilitation, counseling, educational programs). Most of these have indicated the efficacious of CBT in terms of abstinence rates and the decrease of recidivism (Gatz et al., 2007; Messina et al., 2006; Messina, Grella, Cartier, & Torres, 2010; Sacks, McKendrick, & Hamilton, 2012; Zlotnick, Johnson, & Najavits, 2009). In general, cognitive restructuring, learning alternative behaviors to drug use, and relapse prevention were some of the most frequent treatment techniques.

The evolution of cognitive behavioral therapies to the third wave therapy provides a new model of psychopathology. This model uses the therapeutic principles of acceptance and experiential change to treat several mental disorders (Pérez-Álvarez, 2012). Acceptance and Commitment Therapy (ACT) is one of most representative third wave therapies. There is increasing empirical data of ACT

in the treatment of several disorders (Bohlmeijer, Fledderus, Roks, & Pieterse, 2011; Clarke, Kingston, Wilson, Bolderston, & Remington, 2012; Gaudiano & Herbert, 2006; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Juarascio, Forman, & Herbert, 2010; Roemer & Orsillo, 2012). In SUDs, ACT has been shown to be better than Twelve-step facilitation in polydrug users (Hayes et al., 2004). ACT has also been efficacious in the treatment of cannabis dependence (Twohig, Shoenberger, & Hayes, 2007), methamphetamine (Smout et al., 2010), methadone (Stotts et al., in press), and alcohol dependence (Luciano, Gómez, Hernández, & Cabello, 2001; Peterson & Zettle, 2009) and smoking cessation (Gifford et al., 2004). All of these studies illustrate the power of ACT in the treatment of SUDs and support the objectives of this study.

The general goal of the study was to test the efficacy of ACT for treatment of SUDs, in a complex sample of incarcerated women, mostly recidivist, with a history of mental disorders and chronic consumption of various substances from an early age. The participants also had a long history of therapeutic, family, and personal failures.

Method

Participants

Participants were 31 women of the Module 10 of the State Prison of Villabona (Asturias). At baseline, the module was represented by 98 inmates. Inclusion criteria were meeting the diagnostic criteria for SUD, a conviction of over 6 months, and voluntary participation. Diagnosis of SUD was collected using the clinical interview Mini International Neuropsychiatric Interview (Sheehan et al., 1992; Spanish adaptation by Ferrando et al., 2000), which assesses several mental disorders using criteria from the *Diagnostic and Statistical Manual of Mental Disorders*-text revision (American Psychiatric Association [APA], 2000).

Participants ranged in age from 21 to 46 years (M = 32, SD= 6.2). Their profile was 64.5% of single women with family responsibilities (60% had children who were in the care of a family member). The vast majority was convicted for property offense (54.8%) and serving an average sentence of 56.06 months (SD = 37.31). Most were polydrug users, and heroin was the most frequent substance of consumption. Prior to incarceration, 67.7% of them had taken part in at least one rehabilitation program.

Instruments

Ad hoc interview: We developed a semi-structured interview designed ad hoc to collect relevant data such as the history of previous treatment for SUD, current family situation, and past criminal history.

Addiction Severity Index-6 (ASI-6; McLellan, Luborsky, Woody, & O'Brien, 1980; Spanish adaptation by Bobes et al., 2007). This structured interview measures patterns of drug use and lifetime and recent severity problems in seven areas (medical, employment, alcohol and drugs, legal, family/social, and psychological). In each of these areas, items are combined into a composite score (CS). The subjective information is provided by the patient on a 257-item Likert-type rating scale ranging between 0 (*not at all*) and 4 (*extremely*). Levels of internal consistency range between .47 and .95. The values of test-retest reliability ranged between .36 and 1. The legal and the employment areas were not taken into account because of the participants' situation in prison.

Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1992; Spanish version 5.0 by Ferrando et al., 2000). This is a brief structured diagnostic interview that explores the principal Axis I psychiatric disorders of the DSM-IV (APA, 2000). The MINI is divided into modules identified by letters; each one corresponds to a diagnostic category. The MINI has acceptable validity and reliability.

Anxiety Sensitivity Index (AS; Peterson & Reiss, 1992; Spanish adaptation by Sandín, Chorot, Valiente, Santed, & Lostao, 2004). This consists of 16 items, rated on a Likert-type rating scale ranging from 0 (*never*) to 4 (*always*). In addition to the total score, there are three subscales: (1) Somatic, (2) Cognitive and (3) Social. The Cronbach alpha coefficients were .84 (Total), .83 (Somatic), .77 (Cognitive) and .50 (Social). The test has excellent psychometrics properties in clinical population and adequate factor consistency.

Acceptance and Action Questionnaire II (AAQ-II; Hayes et al., 2004b; Spanish version by Luciano, 2010). This scale assesses experiential avoidance and psychological acceptance, two key aspects of ACT. It has 10 items that are rated on a Likert-type scale ranging from 1 (*never*) to 7 (*always*). Higher scores indicate greater psychological flexibility. The internal consistency index was .70.

Urinalysis Multidrug. This is a drug reactive test to control drug use.

Self-recording. The self-report were designed to provide weekly information of the degree of discomfort experienced and actions oriented to values. The participants had to complete these sections by scoring on a scale of 1-10.

Procedures

The data for this study were collected between 2009 and 2012 as part of an experimental investigation at the prison. All study procedures were reviewed and approved by the prison management team. After a briefing with the female population, 31 agreed to participate in the study and provided written informed consent prior to being interviewed. All the information handled in the assessments and interventions was confidential. Randomization took place at prison using a random numbers table prior to the participants' assignation to the groups (ACT, n = 18 and Control Group, CG, n = 13). Assessment was carried out individually in the medical office and lasted 75 minutes for each inmate. This was done by a clinician and who was in charge of administrating the intervention and the measures. She had specific training in ACT and the instruments used in this study.

ACT has its own model of psychopathology, that is, the Experiential Avoidance Disorder (EAD). EAD was developed as a consequence of deliberate efforts to avoid contact with the discomfort created by unpleasant private events (thoughts, memories, feelings). In the context of addictive behaviors and as an alternative to EAD, ACT proposes psychological acceptance. That is, being willing to notice, feel and connect with what the present time offers, according to each individual's personal history. ACT treatment is guided by personal values, as it considers that this is the only context in which clients can find meaning for their discomfort. In general, ACT is based on language defusion. It considers that some language processes are the main cause of ineffective and inflexible behavioral repertoires. ACT uses

paradoxes, metaphors and experiential exercises as therapeutic methods (Wilson & Luciano, 2002).

The treatment, 16 weeks of 90-minute weekly sessions, was administered in a group format, with 4 females in each group. The protocol described in Wilson and Luciano (2002) was adapted and used. A copy of this protocol can be found in Table 1. Participants' self-reports were collected weekly (Figure 1).

We informed the CG that they would receive a physical and mental health assessment at the same time as the experimental group. After the 6-month follow-up, they would receive the same treatment.

From the first month and every week, a prison warden and the researcher conducted a random drug urinalysis in both groups.

Table 1
The ACT protocol

1. Building the therapeutic contract
2. Functional analysis
3. Creative hopelessness. "The man in the cave" and "The farmer and the donkey" metaphors
4. Values clarification
5. Building a commitment. "The funeral" exercise. Metaphor: "Eat the whole apple"
6. Control as the problem. "The rule of 95-5%"
7. Control as the problem. "Pink elephants" and "What's the name of your mother?" exercises
8. The alternative to control. Be willing as a possibility
9. Acceptance exercises. "Eyes on" exercise
10. Cognitive defusion. "The ride with posters", "milk, milk, milk" exercises
11. Establishing language conventions. "I'm having the thought that I'm failure" instead of saying "I'm a failure"
12. Self as context. Metaphor: "Chessboard"
13. Screening for barriers and strengthening values. Metaphors: "The journey" and "Welcome to all and the rude"
14. Acceptance and Commitment. Fear of commitment. Metaphor: "Now you know how to drive"
15. Remember session. Internal dialogue: "This isn't working, it's always the same, I thought it was O.K., but it isn't..." Metaphor: "The rider"
16. Remember session. Relapse prevention

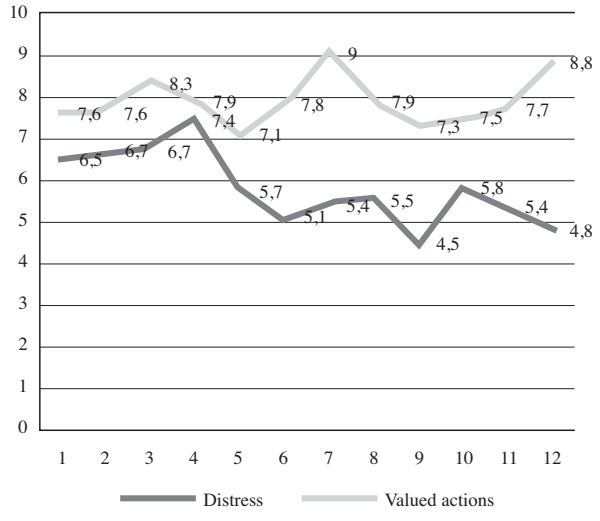

Figure 1. *Distress and valued actions of self-reports*

This objective measure was used to confirm participants' self-reported drug use. After treatment, all participants were assessed. At follow-up assessment, 2 women from the ACT condition and 2 women from the CG condition were lost because they were moved to other prison.

Data analysis

Firstly, we performed a descriptive study. We calculated means, standard deviations, and percentages according to the characteristics of the variables that were presented for each group. Using the Kolmogorov-Smirnoff and Levene statistics (Lv), respectively, we confirmed that the assumptions of normality and homogeneity were met. The next step was to examine the possible existence of selection bias. Pearson and chi square analyses were carried out to test baseline differences. Then, assuming that the causal model is a model of change (Judd & Kenny, 1981), we examined the effect of the variable treatment through pre-posttest differences in scores. To determine whether the change undergone was maintained or disappeared over time, we analyzed the rate of change between follow-up and the initial measure. It was important to assess whether there were group differences in the three measures of frequency of drug use and in the presence of other mental disorders. For this purpose, we conducted the nonparametric Cochran test (Q). Data analysis was performed with the SPSS statistical package (V.19.0), with 5% a priori Type I error.

Results

Table 2 presents the main sociodemographic data of the participants by reference group. The analyses to detect possible initial group differences in sociodemographic and consumption variables and in other dependent variables were satisfactory.

Figure 2 presents the percentages of abstinent females at pre-, post-, and follow-up assessment phases.

All participants consumed actively when initiating the intervention. At posttreatment, a statistically significant group difference was observed in favor of the ACT condition, [χ^2 (1, N = 31) = 20.48, p= .000]. At follow-up, the ACT group maintained this significant difference, [χ^2 (1, N = 27) = 6.09, p= .014]. Cochran's statistic showed that the evolution of ACT was statistically significant, [Q (2) = 9.25, p= .010], but that of the CG was not, [Q (2) = 2, p = .368].

Table 3 shows the composite scores of each area of the ASI-6 assessed for each group. No significant posttreatment group differences were found in any area of the ASI-6. However, 6 months later, the intervention group was statistically different from the control group in the Alcohol area, [t (24, 13.6) = -2.17, p = .048].

Globally, at the initial psychopathological assessment of disorders other than SUDs, the most frequent mental disorders observed were Antisocial Personality Disorder (APD) and Major Depressive Disorder (MDD), with percentages of 64.5 and 51.6, respectively. Anxiety disorders (Panic disorder [PA] and Generalized Anxiety disorder [GAD]) had a lower representation, with percentages of 29 and 22.6, respectively. There was no evidence of other disorders, such as Obsessive-Compulsive Disorder, Anorexia, Psychotic Disorder, Posttraumatic Stress Disorder or Social Phobia.

Table 4 shows the percentages of psychopathology assessed by the MINI. The ACT group showed progressive decreases

in all the percentages of other comorbid disorders, which were generally more pronounced in the anxiety disorders. Despite this, no statistically significant group differences were found.

Anxiety sensitivity improved significantly in the ACT group. In the cognitive subscale we observed a statistically significant pre-post difference, [t (29, 23.95) = -2.72, p = .011], and differences between pretest and follow-up, [t (25, 23.7) = -2.03, p = .05].

With regard to the AAQ-II, the t test revealed statistically significant pre-posttest differences, [t (29, 28.9) = 4.16, p = .000], and differences between pretest and follow-up, [t (25, 17.62) = 4.65, p = .000], favoring the ACT group.

Table 2
Participants sociodemographic characteristics

	ACT	CG
Quantitative variables	**M (SD)**	**M (SD)**
Age	31.17 (6.49)	33.15 (5.82)
Number of incarcerations	2.22 (1.51)	2.54 (1.98)
Sentence (months)	50 (33.11)	59.15 (37.78)
Age of onset (drug use)	16.78 (5.76)	14.85 (2.19)
Qualitative variables	**n (%)**	**n (%)**
Marital status		
Single	13 (72.2)	7 (53.8)
Married	1 (5.6)	1 (7.7)
Divorced/Separated	4 (22.2)	5 (38.5)
Offenses		
Public health crime	5 (27.8)	4 (30.8)
Property crime	9 (50)	8 (61.5)
Against the person	4 (22.2)	1 (7.7)
Principal drug of abuse		
Cocaine	5 (27.8)	5 (38.5)
Heroine	9 (50)	8 (61.5)
Cannabis	3 (16.7)	
Alcohol	1 (5.6)	
Previous drug treatment		
Yes	11 (61.1)	10 (76.9)
No	7 (38.9)	3 (23.1)

Note: M: Mean; SD: Standard Deviation; N: Frequency; %: Percentage

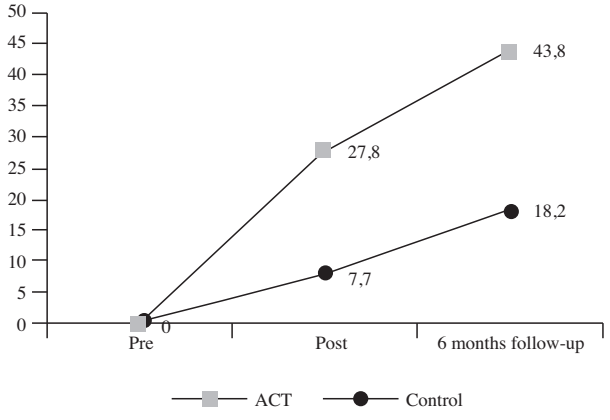

Figure 2. *Percentages of abstinence at pre, post and follow-up*

Table 3
Composite Score (CS) of ASI-6 at pre, post and 6-months follow-up

	ACT			CG		
	pre	**post**	**6 m**	**pre**	**post**	**6 m**
CS Drugs	.47[1] (.4)[2]	.46 (.24)	.40 (.55)	.47 (.6)	.46 (.53)	.44 (.38)
CS Alcohol	.39 (.35)	.38 (.4)	.38 * (.16)	.39 (.2)	.40 (.41)	.42 (.59)
CS Physical health	.48 (.67)	.46 (.79)	.43 (.88)	.42 (.89)	.46 (.81)	.41 (.87)
CS Family/Social	.45 (.69)	.44 (.99)	.39 (.55)	.42 (.35)	.42 (.59)	.39 (.47)
CS Psychological	48.5 (4.9)	47.2 (6)	45.2 (5.9)	46.1 (10.5)	49.3 (5.5)	43 (8.86)

Note: * p<.05; 1 = M; 2 = SD

Table 4
Percentages of psychopathology

		ACT (%)	GC (%)
MDD	Pre	55.6	41.7
	Post	33.3	46.2
	6 m	21.4	27.3
AD	Pre	27.8	33.3
	Post	11.1	30.8
	6 m	7.1	9.1
GAD	Pre	50	16.7
	Post	33.3	23.1
	6 m	7.1	9.1
APD	Pre	61.1	75
	Post	44.4	69.2
	6 m	50	63.6

Note: MDD: Mayor depressive disorder; AD: Anxiety disorder;
GAD: Generalized anxiety disorder; APD: antisocial personality disorder.

Table 5
Anxiety sensitivity and acceptance and Action Questionnaire-II at pre-, post- and follow up phases

	ACT			CG		
	pre	**post**	**6 m**	**pre**	**post**	**6 m**
Total	21,1[1] (14,8)[2]	21,1 (14,8)	16,36 (12,8)	23,31 (13,3)	27,46 (11,4)	25,73 (15,9)
Somatic	9,44 (8)	9,17 (7,8)	7,5 (7,2)	11,38 (6,8)	13,08 (6,8)	11,18 (7,7)
Cognitive*	8,22 (6,2)	5,61 (5,4)	4,36 (4,6)	5,23 (5,4)	8,23 (4,67)	7,55 (5,5)
Social	5,33 (3,86)	6,33 (3,78)	6,79 (7,42)	6,69 (2,89)	6,92 (2,84)	8,27 (5,56)
AAQ-II**	33,33 (17,3)	47,61 (13,37)	53,71 (12,56)	47,85 (17,78)	41,69 (18,87)	43,27 (19,73)

Note: *p<.05; **p<.001. 1=M, 2=SD.

Lastly, the information provided by the self-report revealed a decreasing tendency in distress across the weeks of treatment, and an increasing tendency of value-oriented actions (see Figure 1).

Discussion

This investigation was designed to tap the efficacy of ACT as a treatment for substance addiction and its repercussions. It also aims to provide new data about interventions for SUD in incarcerated population, specifically, in a complex sample of incarcerated women.

Some characteristics of the participants were: early onset of consumption of the main substance, strong association between consumption and delinquency, and the high proportion of psychopathological disorders observed, especially depressive disorders, anxiety disorders, and antisocial personality.

Although the abstinence recorded after the intervention was remarkable, the treatment effects were more clearly appraised at the 6-month follow-up. In fact, the ACT group achieved 43.8% of abstinence versus the 18.2% observed in the CG. Similar numbers have been found in prior studies comparing ACT protocols with other interventions. For example, in non-incarcerated polyconsumers, Hayes et al. (2004) compared ACT versus 12 steps, recording abstinence rates at 6 months of 42% versus 19%, respectively. Lastly, two recent studies also showed that ACT was more efficacious than pharmacological treatment (Gifford et al., 2004) and than a cognitive-behavioral-type treatment in treatment for tobacco dependency (Hernández-López, Luciano, Bricker, Roales-Nieto, & Montesinos, 2009).

Similar to prior studies (e.g., Hayes et al., 2004; Gifford et al., 2004), ACT reached its maximum efficacy for consumption reduction at 6 months. Although surprising, the most remarkable effects on abstinence were not observed immediately after the intervention. The main goal in ACT is to help clients to come into contact with the core of their difficulties, and from there, to work at rebuilding their lives with a sense of value. It is a systematic training to deal with the cognitive and emotional barriers linked to ceasing consumption, and this goal should be chosen by the client. This training is a process that takes time. This "incubation effect" observed in the ACT group, which began to emerge at posttreatment, became more notable at the follow-up assessment. This effect could also be observed in other studies working with clinical samples without SUDs (e.g., Clarke et al., 2012, in patients with personality disorders; and Lundgren, Dahl, Melin, & Kies, 2006, in patients with epilepsy).

However, despite that in the CG, no guidelines for ceasing drug consumption were provided, abstinence rates of 18.2% were also observed in this group. It seems that the administration of ACT in a setting where access to drugs was initially possible could generate environmental changes, such as lower availability of substances. Ultimately, ACT also teaches clients to modify the stimulus conditions that can affect their addictive condition.

It is known that substance consumption acts as a strategy to avoid the distress that often foments other psychological problems (Ciairano, Bosma, Miceli, & Settanni, 2008; Luciano, Páez-Blarrina, & Valdivia-Salas, 2010). It is therefore not surprising that, at the initial psychopathological assessment, a broad array of other mental disorders was detected in most of the sample. However, the percentage of the so-called dual diagnosis progressively decreased across assessments. Although not statistically significant, we could confirm notable clinical improvements in many participants, as if the defining symptoms of many of these psychopathological syndromes, though still present, were now slowly causing less disruption in their lives.

In fact, with ACT, we observed a general and progressive reduction in the scores of anxiety sensitivity, as well as a significant increase in psychological acceptance. We therefore wonder whether this anxiety sensitivity (or excessive reflexibility on the symptoms of anxiety; Pérez-Álvarez, 2008) could favor the activation of avoidance strategies. For example, in two recent publications, it was shown that fear of anxiety predicted high levels of pain, depression, anxiety, and visits to the primary healthcare doctor (McCracken & Keogh, 2009; González, Fernández, & Torres, 2010). In any event, ACT training generated greater psychological flexibility, which manifested as more acceptance or distancing from the symptoms of anxiety and this was corroborated by means of the AAQ-II instrument.

To conclude, in view of the clinical improvements observed in the ACT group in diverse relevant areas, it can be stated that the intervention was valuable and also efficacious. ACT taught these women to articulate their own lives, distancing themselves from the surrounding social setting, as well as to openly contact with a developing present. All in all, the administration of therapies like ACT specifically target psychological flexibility and actuation, especially when applied in a context of hopelessness such as a penitentiary setting.

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