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Contingency management for substance use disorders in Spain: Implications for research and practice

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ABSTRACT

Objective. We provide a narrative review of published studies evaluating voucher-based contingency management (CM) treatment for cocaine, nicotine and cannabis use disorders in Spain and discuss the concerns and future challenges.

Method. Published studies between 2008 and 2015 that evaluated the impact of incentives for SUD in Spain and included an appropriate control or comparison condition were identified and reviewed.

Results. Adding voucher-based CM to standard treatments obtained better treatment retention and cocaine abstinence than standard care alone. CM also improved psychosocial functioning. Economic status or depressive symptoms did not affect the results of CM treatment for cocaine dependence. The addition of a CM protocol to cognitive behavioral treatment (CBT) also improved treatment effectiveness for smoking cessation. Available data on the effect of CM on cannabis use disorders (CUD) with young people did not allow confirmation of its superiority to date.

Conclusion. The research conducted to date in Spain confirms and expands the findings of studies conducted in the US supporting the effectiveness of CM in the context of community settings with cocaine- and nicotine-dependents. However, CM has not yet been readily adopted into general clinical practice in Spain or the rest of Europe. The limited effectiveness of CM for CUD is likely due to the scarcity of data and may change with more studies, taking into account recent research on this topic in the US. Continued efforts are warranted to further develop and disseminate incentive-based treatments for SUD across clinical settings and populations in Spain.

Introduction

Substance misuse is a continuing public health burden in Europe. According to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), almost a quarter of the adult population in the European Union, or over 80 million adults, are estimated to have used illicit drugs at some point in their lives. In most cases, they have used cannabis or cocaine (European Monitoring Centre for Drugs and Drug Addiction, 2014).

Around 14.1 million or 4.2% of adults (aged 15–64) have ever used cocaine, while around 1.5 million (0.5% of all adults) are classified as current users. Cocaine was cited as the primary drug for 14% of all reported clients entering professional drug treatment in 2012 (55,000), and 18% of those entering treatment for the first time (26,000). The highest percentages of clients seeking help for cocaine use are found in Spain and the Netherlands (European Monitoring Centre for Drugs and Drug Addiction, 2014).

Tobacco is the substance most used daily and smoking continues to be the leading preventable cause of premature death in Europe. Smoking prevalence (defined as those who had smoked ≥100 cigarettes in their lifetime and smoked when the survey took place) remains high (between 15.7% in Sweden and 44.3% in Bulgaria), despite control policies and mass media campaigns (Gallus et al., 2014). In Spain, the habit of smoking is the health problem that causes the highest mortality and morbidity rates (Gonzalez-Enriquez et al., 2002). It is also the source of the highest preventable cost to the National Health Service (Diaz-Gete et al., 2013) and exceeds the excise duty levied on tobacco products (National Committee for Smoking Prevention, 2009). According to the last national survey (Ministerio de Sanidad Servicios Sociales e Igualdad, 2012), the percentage of daily smokers aged 16 or older in 2012 was 24%. The vast majority of smokers declare a desire to quit smoking and approximately 27.4% have tried it in the last year (National Committee for Smoking Prevention (CNPT), 2008).

The percentage of daily or almost daily cannabis users among young adults varies from 0.1% in Slovakia to 4.4% in Spain. Despite the fact that not everybody smoking cannabis needs treatment, cannabis use in young people can be very harmful. Accordingly, cannabis is the drug most frequently reported as the principal reason for entering drug treatment by first-time clients. For instance, in Spain, 92% of adolescents in

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treatment under 15 years of age and 79% of those aged 15–19 report cannabis as their primary drug of abuse (European Monitoring Centre for Drugs and Drug Addiction, 2012).

Therefore, the development and dissemination of effective treatments for substance use disorders (SUD) is an important public health priority in Spain and the rest of Europe.

There is extensive clinical evidence which shows that voucher-based Contingency Management (CM) is effective in the treatment of addiction to different types of drugs, and in diverse populations (Dutra et al., 2008; Lussier et al., 2006; Prendergast et al., 2006; Stitzer and Petry, 2006). CM is a strategy that provides reinforcing consequences when patients meet treatment goals (e.g. abstinence), and withholds those consequences or uses punitive measures when patients engage in the undesired behavior. Usually, reinforcers are vouchers exchangeable for retail goods and services.

CM interventions were frequently criticized for the generalization of its findings when applied to community settings and social-cultural realities different from that in the United States (Carroll, 2014; Sindelar et al., 2007), so further research was needed to demonstrate the generalization potential of the voucher-based intervention beyond that country. Some important European institutions such as the National Institute for Health and Clinical Excellence (NICE) recommend the use of CM interventions for the treatment of people who misuse drugs in the healthcare and criminal justice systems (National Institute for Health and Clinical Excellence, 2007). However, voucher-based CM procedures have not yet been widely adapted and implemented in Europe. Besides the ones conducted in Spain, there are only isolated studies for cocaine (Petitjean et al., 2014) and tobacco dependence (Etter, 2012) in Switzerland, or heroin dependence in the United Kingdom (Weaver et al., 2014). It is of great interest, therefore, to analyze the extent to which the efficacy of CM interventions in the US is reproduced in a different socio-cultural reality, such as that of Spain.

Over the last 10 years, the Group on Addictive Behaviors from the Department of Psychology at University of Oviedo (Spain), in collaboration with clinical researchers from the Catarroja Addictive Behaviors Unit in Valencia, the drug treatment clinics of 'Proyecto Hombre', Professor Stephen T. Higgins from the University of Vermont and Professor Alan Budney from Geisel School of Medicine at Dartmouth have adapted and implemented voucher-based CM interventions for the treatment of SUD. Although the majority of these studies have focused on cocaine dependence, three studies have also been done on nicotine dependence (ND) as well as problems arising from cannabis use in young people (meeting the diagnostic criteria for cannabis abuse or dependence was not an inclusion criteria). In all these studies, the CM procedures were combined with other psychotherapies (specifically cognitive behavioral treatments) and compared with standard interventions for SUD. Most research has focused on analyzing the effectiveness of CM in community settings, though research has also been done on the efficiency of treatment, methods for obtaining resources for incentives, or analysis of the moderating effect of variables such as depressive symptoms or socioeconomic status.

This paper summarizes the methods followed and results of these studies. In addition, it will address a number of relevant issues to take into account in the implementation of CM procedures in Spain and by extension, the rest of Europe.

Method

Published studies between 2008 and 2015 that evaluated the impact of incentives for SUD in Spain and included an appropriate control or comparison condition were identified and reviewed. The literature search was conducted using major databases (PsychInfo, Medline, Scopus, Tripdatabase, Social Science Citation Index, Cochrane, and the databases of CSIC: ICYT, ISOC, and IME), gray literature (Google Scholar and Teseo), and a direct review of specialized journals, books, and monographs. The key words were: contingency management, incentives, vouchers, behavioral treatment, effectiveness, Spain, drug use, alcohol, tobacco, nicotine, cocaine, marijuana, cannabis, and heroine. These terms were searched in full documents. Only Spanish or English studies were included. The criteria for study inclusion were: The study was implemented by a Spanish research group, reported outcome evaluations which were aimed at primarily treating substance abuse or dependence, and had an experimental, or quasi-experimental design with pretest–posttest and/or follow-up measures.

Characteristics of studies on CM for SUD in Spain

Several clinical trials involving CM for SUD have been run in Spain in the last decade. All of these studies are from the same research group. According to those reports on substance use problems and treatment demand in Spain, the first trials aimed to analyze the effectiveness of voucher-based CM intervention for cocaine dependence. After these seminal trials, the effectiveness of CM was also tested for adolescents with cannabis use disorders and also for nicotine-dependent individuals. Table 1 shows the main characteristics of the trials, including details about settings and participants. All studies were carried out in outpatient community-based clinics with treatment-seeking patients. In the cocaine and cannabis trials, patients were recruited and treated at Proyecto Hombre, the largest non-profit specialized clinics for individuals with SUD in Spain, and also at two clinics from the National Health System. These facilities were located in the north (Asturias), centre (Madrid) and east (Valencia) of Spain. For the cocaine studies, on-site demand was enough for recruiting participants while advertisement through pamphlets, radio and local newspapers were used for the cannabis and tobacco trials. The tobacco trials were run at the Addictive Behaviors Unit of the University of Oviedo (Asturias), a community-based clinic serving individuals from the general population. Inclusion criteria for the trials were based on standard criteria for clinical trials

Table 1
Main characteristics of Contingency Management trials in Spain.

	Context	Recruitment	Inclusion criteria	Exclusion criteria	Therapists
Cocaine trials	Community clinics (*Proyecto Hombre*) + Public Health System (*UCA Catarroja*)	On-site demand	- >18 years old - DSM-IV-TR cocaine dependence	- Opioid dependence - Severe psychiatric disorder	Trained master's-level psychologists
Tobacco trials	Community clinic (*Addictive Behaviors Clinic* at the University)	On-site demand + advertisement	- >18 years old - DSM-IV-TR nicotine dependence - 10 or more cigarettes per day	- Severe psychiatric disorder - Other substance-use disorder	Trained master's-level psychologists
Cannabis trial	Community clinic (*Proyecto Hombre*) + Public Health System (*Madrid Salud*)	On-site demand + advertisement	- 12–18 years old - Cannabis use in the previous 30 days - Family support	- Severe psychiatric disorder - Other drug-use disorder	Trained master's-level psychologists

Data were collected 2008–2015 in Spain.