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THE ROLE OF EXPOSURE TECHNIQUES IN MULTI-COMPONENT SMOKING CESSATION TREATMENTS

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Abstract: *The main purpose of this research is to assess whether adding exposure therapy to the combination of multi-component cognitive-behavioural and nicotine patch therapies increases the efficacy of this combination for smoking cessation. The research involved the comparison of results obtained from two treatment programmes that combined cognitive-behavioural techniques and nicotine patches, one including and the other excluding exposure therapy.*

Keywords: *multi-component cognitive-behavioural therapy, smoking cessation, efficacy of smoking cessation treatment*

Authors' Note

This chapter is based on the article *"¿Qué aportan las técnicas de exposición a la efectividad de la terapia cognitivo-conductual con parches de nicotina para dejar de fumar?"* ("How do exposure techniques contribute to the efficacy of the cognitive-behavioural therapy with nicotine patches for smoking cessation?") published in the Spanish journal *Psicooncología* in 2006 (vol. 3, no. 2-3, pp. 305-318). We would like to thank the UCM's Vice Chancellor Office which sponsored the programme "A Smoke-free Year at the Complutense" in which this research is included; and also to *Pfizer Consumer Healthcare* for their kind support and advice on nicotine patches, and to all resident psychologists of the UCM's University Psychology Clinic for their invaluable help in several stages of our research.

Both clinical and correlational research studies have corroborated the idea that the smoking behaviour of smokers and the relapses of individuals who want to quit smoking are strongly connected with certain stimuli and specific contexts (Brandon, Piasecki, Quinn, & Baker, 1995; Carter & Tiffany, 1999). In fact, when smokers are exposed in the laboratory to smoking behaviour-related stimuli such as, for example, lighters, ashtrays or cigarettes, they display a significant increase in their cardiovascular responses and desire to smoke as compared to their exposure to neutral stimuli (Maude-Griffin & Tiffany, 1996; Niaura, Abrams, Pedraza, Monti, & Rohsenow, 1992;

Thewissen, van den Hout, Havermans, & Jansen, 2005). Furthermore, higher reactivity to smoking behaviour-related stimuli predicts a decreased probability of reaching abstinence after following a smoking cessation treatment and an increased probability of relapse (Abrams, Monti, Carey, Pinto, & Jacobus, 1988; Niaura, Abrams, DeMuth, Pinto, & Monti, 1989; Waters et al., 2004). This data has led researchers to consider the therapeutic benefits of reducing the associative force of smoking behaviour-related stimuli through exposure techniques based on classical conditioning. Typically, exposure techniques involve the smoker being prevented from smoking (response prevention) while undergoing systematic and continuous exposure to stimuli and contexts previously associated with the smoking behaviour, as the final objective is to extinguish the smoker's conditioned responses to said stimuli.

However, the few research studies that had tested the efficacy of exposure techniques for smoking cessation have failed to find that these techniques alone are more efficacious than other psychological treatments such as relaxation training (Götestam & Melin, 1983) or rapid smoking (Corty & McFall, 1984; Raw & Russell, 1980). Furthermore, research to date has neither proved that smokers receiving exposure techniques show higher abstinence rates than smokers who simply receive social support (Raw & Russell, 1980) or are on the waiting list (Götestam & Melin, 1983). Therefore, the effectiveness of exposure techniques as the sole smoking cessation treatment is, at this point in time, questionable.

Yet, the inclusion of said techniques in psychological or psychopharmacological multi-component programmes might increase their efficacy. To date, only three studies have explored this option. Lowe, Green, Kurtz, Ashenberg and Fisher (1980) found that exposure did not significantly increase the efficacy of a psychological treatment programme based on relaxation training and discussion of goals: on completion of three- and six-month follow-ups, psychological treatment that did not involve exposure reached abstinence rates of 71% and 29%, respectively, that is, similar rates to those obtained with psychological treatment including exposure (60% and 27%, respectively). Brandon, Zelman and Baker (1987) analyzed the efficacy of a treatment based on rapid smoking, psychoeducation, social reinforcement, coping response training and contingency contract, by comparing the application of this treatment alone with its application combined with four additional exposure therapy sessions. Even though on completion of the exposure sessions the group of patients that received the treatment showed a slightly higher abstinence rate than the group of patients that did not undergo said treatment (65% vs. 37%), the difference at the six-month follow-up already failed to be statistically significant (50% vs. 37%), and even more so after one year (40% vs. 37%). Finally, Niaura, Abrams, Shadel, Rohsenow, Monti and Sirota (1999) did not find any statistically significant differences between the abstinence rates obtained with four different types of treatment: brief cognitive-behavioural therapy, cognitive-behavioural therapy including exposure, cognitive-behavioural therapy including nicotine gum, and cognitive-behavioural therapy including both nicotine gum and exposure. Indeed, the respective abstinence rates were 34.4%, 32.3%, 48.6% and 38.7% at the one-month follow-up; and 12.5%, 12.9%, 14.3% and 3.2% at the one-year follow-up.

In short, previous research studies do not appear to support the idea that exposure techniques on their own are an efficacious smoking cessation treatment, nor that said

techniques could enhance the efficacy of other psychological or psychopharmacological treatments. Nevertheless, several authors have indicated that the low efficacy shown by exposure techniques to date could be due to the fact that these techniques, when applied to both smoking behaviour and the treatment of addictions in general, have been neither designed nor implemented by taking into account the latest breakthroughs of research on extinction (Conklin & Tiffany, 2002; Conklin, 2006; Thewissen, Snijders, Havermans, van den Hout, & Jansen, 2006). Thus, for example, contemporary research on animal and human learning processes suggests that the extinction that occurs during the exposure therapy does not imply a direct reduction of the initial association between conditioned stimulus (CS) (e.g., cigarette) and unconditioned stimulus (US) (e.g., nicotine), but a learning of new inhibitory associations with CS (CS – not US). These new associations learnt during the application of exposure techniques are controlled by the context in which they arise: within the context of the exposure therapy, the individual learns that the US will not come after the CS anymore. As a result, at a later stage the phenomenon known as "renewal" may occur: an extinguished conditioned response (e.g., the urge to light up when detecting the presence of a cigarette) is reignited when the individual is exposed to the CS (e.g., the cigarette) outside of the context of the exposure therapy, that is, outside of the context of extinction. In other words, the urge to smoke fuelled by stimuli related with the smoking behaviour, such as, for example, a cigarette, may be extinguished within the context of the clinic where the patient is subjected to the exposure therapy. However, when the patient is exposed to a cigarette outside the clinic (e.g., in a pub), these conditioned urges may rekindle and thus render the exposure techniques ineffective (Conklin & Tiffany, 2002; Conklin, 2006; Thewissen et al., 2006).

A logical consequence of this understanding of both the extinction processes and the occurrence of renewal phenomena is the need to design exposure techniques that involve, at least, replicating as accurately as possible the original contexts in which the association CS-US was built in the first place, and expanding the contexts in which said exposure, and hence the extinction, takes place (Conklin & Tiffany, 2002). Therefore, the contexts used during the application of the exposure techniques should be multiple and as close as possible to the real contexts in which the individual found, and will again find, smoking behaviour-related stimuli. From this perspective, it is understandable that a number of previous studies did not find any evidence of the efficacy of exposure techniques, as some researchers (Corty & McFall, 1984; Götestam & Melin, 1983) adopted stimuli-presentation procedures (e.g., imagination, audio presentation) which do not replicate accurately the real contexts previously associated with the smoking behaviour, or in which patients will find the conditioned stimuli that they are seeking to extinguish.

The main purpose of this research is to assess whether adding exposure therapy to the combination of multi-component cognitive-behavioural and nicotine patch therapies increases the efficacy of this combination for smoking cessation. The research involved the comparison of results obtained from two treatment programmes that combined cognitive-behavioural techniques and nicotine patches, one including and the other excluding exposure therapy. This therapy was designed for the purpose of maximizing extinction and preventing the effects of renewal, by using

at the clinic an in vivo procedure involving the presentation of stimuli associated with smoking behaviour in contexts that are very similar to the either real contexts previously associated to smoking behaviour or contexts in which patients will find conditioned stimuli at a later stage (e.g., having a coffee, drinking in a smoke-filled pub), and the inter-session scheduling of self-exposure tests to those stimuli in multiple contexts.

METHOD

Participants

The research included 48 smokers who undertook two treatment programmes for smoking cessation conducted at the *Clínica Universitaria de Psicología* [University Psychology Clinic (previously known as *Unidad de Psicología Clínica y de la Salud*)] of the Complutense University of Madrid (UCM, by its Spanish acronym). The first programme was conducted in 2002-03 (22 smokers) and the second in 2005-06 (26 smokers). Both programmes included a multi-component cognitive-behavioural therapy and nicotine patches, but the second also included an exposure therapy. Both programmes were sponsored by the UCM's Vice Chancellor's Office, and therefore all patients were UCM teachers or administration and service staff who were provided free participation in the project. The main demographic and clinical features of the patients in each treatment programme are specified in Table 1. Prior to the start of the pre-treatment assessment, all patients signed an informed consent document for their participation in the research.

Table 1. Demographic and clinical characteristics of patients who underwent the programmes combining cognitive-behavioural therapy (CBT) and nicotine patches with or without exposure therapy

Characteristics	Treatment (CBT + patches)	
	With exposure (n = 26)	No exposure (n = 22)
Age (average in years; [SD])	46.5 [9.8]	44.5 [8.6]
Gender (% women)	61.5	68.2
Education level (%)		
Primary Education	11.5	4.5
Secondary, High School or Vocational Training	26.9	4.5
University	61.5	90.9
Marital status (%)		
Married or de facto	73.1	90.9
Unmarried	23.1	9.1
Separated or divorced	3.8	0
Profession (%)		
University professors	42.3	54.5
Administration and service staff	57.7	45.5
No. cigarettes/day prior to treatment (average [SD])	21.3 [8.7]	19.6 [5.9]
High nicotine dependency (% who smoke ≥ 30 cigarettes/day)	23.1	9.1

Note. SD = standard deviation. Chi-square or *t* tests did not provide with $p < 0.05$ statistically significant differences between both groups for any characteristics.

Design

A pre-, post-, and follow-up, quasi-experimental study of two groups was conducted. The study was quasi-experimental since the patients were not randomly allocated to either treatment programme (with or without exposure).

Procedure

Patient assessment and treatments were conducted by the Clinic's resident psychologists (García-Vera, 2004a).

Pre-treatment assessment

All patients underwent an individual pre-treatment assessment involving a structured interview to gather information on several aspects of their smoking habit (e.g., cigarette smoking, situations that trigger smoking, reasons to quit smoking, etc.), as well as on specific demographic (including age, education, profession, etc.) and clinical (including smoking-related diseases) variables.

Multi-component cognitive-behavioural treatment

In the treatment programme with no exposure, the aforementioned assessment session also involved the start of the treatment, part of which focused on the application of motivational techniques, specifically motivational interview and preparation of a letter of personal commitment to the therapy. In the treatment programme with exposure, the patient was invited to an individual treatment session at a later stage, in which the aforementioned motivational techniques would be applied.

Following the motivational treatment, all patients started a group multi-component program (5-7 individuals per group), which combined several cognitive-behavioural strategies and techniques with nicotine patches. The group programmes in the non-exposure treatment included 9 sessions conducted over 11 weeks – one per week, except sessions 2 and 3 and the final three sessions. Only 48 hours passed between sessions 2 and 3, as the purpose of session 3 was to provide immediate support to patients following the session in which they had undertaken to quit smoking completely (the second session or D-Day, the "Tobacco Independence Day") while the final three group sessions were conducted with a two-week interval between sessions.

In the treatment including exposure, the group programme included 10 sessions held within 10 weeks, one per week, except for sessions 2 and 3, which, like the non-exposure programme, only 48 hours passed between sessions due to identical aforementioned reasons.

As it is common in cognitive-behavioural therapies, in both treatment programmes (with and without exposure), patients were required to complete a series of tasks between sessions, which were essentially focused on rehearsing and consolidating the skills learnt during the therapy sessions. The approximate length of each group treatment session was 90 minutes. The main psychological strategies and techniques used during the group sessions in both treatment programmes – partly based on strategies and

techniques drawn from the "Ex-Moker" quit-smoking programme (García-Vera, 2004b) – were the following: (1) psychoeducation (i.e., information on the smoking habit, dependence, the quitting process, organism recovery processes (including weight control-related aspects), impact on moods, smokers' cognitive biases and dysfunctional beliefs; (2) reinforcement techniques (i.e., graphic representation and measurement of the CO in the expired air and reinforcement of CO level reductions); (3) stimulus control techniques; (4) social support during the treatment, and (5) techniques to confront desire, anxiety and relapse-inducing situations, to help patients overcome them successfully and stay away from tobacco (e.g., distraction, stop thinking, positive self-instructions, cognitive restructuring, diaphragm breathing training, assertiveness training, problem solving training).

Nicotine patches

In both treatment programmes' second group session (D-Day), patients were introduced to Nicorette© 16-hour nicotine patches, and provided the corresponding user information and instructions both in writing and orally. Patients applied themselves the first patch during this second session, witnessed by the therapist, and received the required patches (one per day) to be used until the following treatment session. The guidelines for patch use followed recommended clinical practice guidelines (Fiore et al., 1996, 2000). On the basis of results obtained from meta-analytical research studies, which have not detected any additional benefits to extending the nicotine patch therapy beyond 8 weeks (Fiore, Smith, Jorenby, & Baker, 1994), these guidelines recommend the application of 16-hour nicotine patches during 8 weeks, gradually reducing the nicotine release dosage: 4 weeks using 15-mg nicotine patches, 2 weeks with 10-mg patches, and 2 weeks with 5-mg patches [see Fiore et al.'s (1996) general strategy table 3). This was the guideline used in both treatment programmes assessed in this research.

Exposure therapy

In the treatment programme with exposure, in vivo exposure to smoking behaviour-related stimuli was introduced from the fifth group treatment session, which involved exposure to a 7-stimulus hierarchy conducted over the following group sessions. The first stimulus, for example, involved opening the packet of cigarettes, extracting a cigarette, handling it with both hands, smelling it while holding with both hands, placing the cigarette on the hand that usually holds the cigarette for smoking, grabbing the lighter with the other hand and, finally, handling the lighter. Further stimuli (e.g., drawing the cigarette to the mouth, holding it between the lips, sucking on its filter tip, taking a drag) gradually increased the amount of smoking behaviour-related actions as well as the amount of contextual smoking behaviour-related elements (e.g., lighting a cigarette in full view, smoke filling the room, having a coffee or any drink that patients normally combined with cigarettes) – to the point that the last stimulus of the hierarchy involved, for example, performing all the aforementioned actions while patients were having a coffee (or any other drink they normally combine with cigarettes) at a street cafe packed with smokers and filled with cigarette smoke.

In addition, patients were required to build their own personal hierarchy including four smoking habit-related stimuli, akin to the hierarchy used during the sessions. Tasks involving gradual self-exposure to the first two stimuli of the group hierarchy and the four stimuli of the personal hierarchy (with a minimum of two daily exposures to the corresponding stimulus) were scheduled between sessions. These self-exposure actions were assessed via patient's own records and discussed in the group sessions.

Post-treatment assessment and follow-up

At the start of the last group treatment session, patients were asked about their tobacco consumption since they quit smoking (D-Day), and also underwent an analysis of CO in expired air with a *Mini 2 Smokerlyzer* (*Bedfont Scientific*). Unfortunately, due to technical problems affecting the database, all CO measurements from the non-exposure treatment programme were lost. Post-treatment abstinence was thus based on the self-report on continuous abstinence since D-Day (9 and 7 weeks respectively for programmes with and without exposure). For exposure programme patients, the abstinence self-report was compared with the 24-hour abstinence measurement based on the determination of CO being under 8 ppm (Becoña & Vázquez, 1998).

One month later, all patients were contacted by phone for a structured interview in which they were asked questions including whether they had smoked during that month. For the one-month follow-up, a negative answer to said question defined abstinence.

All patients were again contacted by phone after 6 and 12 months, except those who had started treatment in mid-2006 and six months had not yet passed since completion of their treatment. In both follow-ups, patients also underwent a brief structured telephone interview, in which they were asked whether they had smoked during the last six or twelve months, respectively. For both six- and twelve-month follow-ups, a negative answer to said question defined abstinence.

RESULTS

Demographic and clinical characteristics and treatment attendance

Chi-square tests were conducted for the purpose of detecting the occurrence of differences between both treatment groups, with or without exposure, in terms of gender, education level, marital status, and profession (see Table 1). No statistically significant differences connected to the aforementioned characteristics were detected between both groups (P^2 = .23, 5.65, 2.71 and .71, respectively, all of them non-significant with $p < .05$). In addition, *t* tests for independent measurements were conducted for the purpose of detecting the occurrence of differences between both treatment groups in terms of patient age and number of cigarettes smoked regularly before the treatment. Again, no statistically significant differences were detected in either group in connection to said variables ($t = .73$ and .75, respectively, both non-significant with $p < .05$). Furthermore, taking the fact of smoking 30 or more cigarettes daily as an indicator of high nicotine dependency (De León, Díaz, Becoña, Gurpegui, Jurado, & González-Pinto, 2003), no statistically significant differences were detected in connection with the number of smokers with high nicotine depend-

ency between the exposure and non-exposure groups (23.1% vs. 9.1%; $P^2 = 1.68$, non-significant with $p < .05$).

The percentage of treatment sessions attended by patients was also calculated. The non-exposure group's percentage was calculated over a total of 10 treatment sessions (1 individual treatment-assessment + 9 group treatment). The exposure group's percentage was calculated over a total of 11 treatment sessions (1 individual treatment-assessment + 10 group treatment). A *t* test for independent measurements did not reveal any statistically significant differences in the percentage of treatment sessions attended between the exposure and non-exposure groups (79% vs. 82.3%; $t = -.38$, non-significant with $p < .05$). Failure to attend half of the sessions was considered as discontinuance of treatment. Non-attendance was calculated at 13.6% in the exposure group and 13.6% in the non-exposure group – and no statistically significant differences were detected in the percentage of discontinuances ($P^2 = .29$, non-significant with $p < .05$).

Abstinence rates

It was impossible to contact a patient who had discontinued the non-exposure treatment and, therefore, no post-treatment or follow-up abstinence data were gathered from this patient. The lost data corresponding to this patient were included as a failure, and the percentages of abstinent patients over the total of patients who started the treatment on time of completion and 1-, 6- and 12-month follow-ups are included in Table 2. Prior to the analysis of these data, it is important to take into account that the 6- and 12-month follow-ups do not include data corresponding to exposure group patients who had started the treatment in mid-2006, with whom no 6- and 12-month follow-ups were conducted as six months had not passed since completion of their treatment at that stage.

Chi-square tests were conducted for the purpose of detecting the occurrence of differences between both treatment groups, with or without exposure, in the percentage of abstinent patients at post-treatment and 1-month follow-up stages (see Table 2). No statistically significant differences connected to the abstinence percentages were detected between both groups (both $P^2 = .20$ and non-significant with $p < .05$).

Taking into account only patients who had completed the treatment with sufficient time to conduct 6- and 12-month follow-ups (see Table 2), the P^2 tests did not reveal any statistically significant differences between both treatment groups in connection with the percentages of abstinent patients at treatment completion and 1-month follow-up stages (both $P^2 = .79$ and non-significant with $p < .05$). Again, said tests did not reveal any statistically significant differences between both groups in connection with the percentages of abstinent patients at the 6- and 12-month follow-up stages ($P^2 = 2,37$ y $3,28$, respectively, both non-significant with $p < .05$). However, at the one-year stage, the difference between both groups, which favoured the exposure group (66.7% vs. 36.4%), almost reached statistical significance ($p < .07$). In fact, the difference became so great (30.3%) that the lack of statistical significance suggested that the research lacked statistical power at the time of assessing abstinence at the 12-month stage.

Table 2. Abstinence rates in the two programmes combining cognitive-behavioural therapy (CBT) and nicotine patches with or without exposure therapy.

Abstinence	Treatment (CBT + patches)	
	With exposure	No exposure
All smokers (n)	26	22
Abstinence at post-treatment stage	65.4%	59.1%
Abstinence at 1-month follow-up	65.4%	59.1%
Smokers who underwent 6- and 12-month follow-ups (n)	15	22
Abstinence at post-treatment stage	73.3%	59.1%
Abstinence at 1-month follow-up	73.3%	59.1%
Abstinence at 6-month follow-up	66.7%	40.9%
Abstinence at 12-month follow-up	66.7%	36.4%

Note. Chi-square tests did not provide with $p < 0.05$ statistically significant differences between both groups for any abstinence measurements.

DISCUSSION

The main purpose of this research was to assess whether adding exposure techniques would significantly improve the efficacy of the combined cognitive-behavioural and nicotine patch therapies in both the short-term (post-treatment and 1-month follow-up) and the mid-/long-term (six- and twelve-month follow-ups). Our results do not appear to support said hypothesis. Indeed, even though the combined cognitive-behavioural therapy and nicotine patch programme including exposure thecniques provided abstinence rates during post-treatment and at the 1-, 6- and 12-month follow-up stages that were higher than the rates corresponding to the combined non-exposure cognitive-behavioural and nicotine patch programme without exposure techniques (see Table 2), said differences were not statistically significant. Therefore, we are to accept the null hypothesis of absence of differences between both treatment programmes and, as a result, conclude that adding exposure techniques does not significantly improve the efficacy of combined cognitive-behavioural and nicotine patch programmes.

Said absence of statistically significant differences was clear despite the fact that both treatment programmes for smoking cessation yielded excellent results. Indeed, both programmes considered, we detected abstinence rates of up to 65% in the post-treatment stage, 52.8% at the six-month follow-up stage and 50% at the 1-year stage. These results are similar or higher than the results obtained in previous research on the efficacy of cognitive-behavioural therapies, nicotine patches or the combination of both. Thus, for example, further analysis of the data gathered from the meta-analytical review conducted by Sánchez Meca, Martín Martínez, Olivares Rodríguez, and Rosa Alcázar (1999) on the efficacy of cognitive-behavioural smoking cessation therapies in Spain leads to estimate abstinence rates of 67.2% during post-treatment, 31.9% at six months and 29.3% at twelve months (García-Vera & Sanz, 2006). Likewise, further analysis of the data gathered from the meta-analytical review conducted by Fiore et al. (1994) on

the efficacy of nicotine patches leads to expect abstinence rates of 17.2% during post-treatment, 22.4% at six months and 10.2% at twelve months – while the application of nicotine patches combined with cognitive-behavioural therapy reaches abstinence rates of 50.4% during post-treatment, 28.9% at six months, and 27.6% at twelve months (García-Vera & Sanz, 2006).

Therefore, any ground effect must be ruled out when attempting to explain the absence of differences between treatment programmes with or without exposure. In fact, this absence of differences is consistent with the results of previous published studies, which also found that exposure techniques did not increase significantly the effectiveness of either multi-component cognitive-behavioural exposure programmes (Brandon et al., 1987; Lowe et al., 1980) or multi-component treatment programmes combining cognitive-behavioural therapy with nicotine patches (Niaura et al., 1999). Moreover, in this research, and in comparison with other previous research, the exposure therapy was designed according to Conklin y Tiffany's (2002) recommendations in order to maximize extinction and prevent the renewal effects, and involving, for this purpose, in vivo presentation at the clinic of smoking behaviour-associated stimuli – presenting these stimuli in contexts that recreate accurately the real contexts previously associated to the smoking behaviour, or in which patients would face conditioned stimuli at a later stage – and scheduling multiple-context self-exposure situations between sessions. Yet, even though Conklin and Tiffany's (2002) recommendations were thoroughly followed for the design of the exposure therapy, our results do not suggest that said therapy increases significantly the abstinence rates of a multi-component programme combining cognitive-behavioural therapy with nicotine patches.

However, in the light of the limitations of this study, this conclusion should be taken with precaution. The first limitation is that its design was not experimental. As patients were not randomly assigned to treatments, it might be that both groups of patients could differ in some relevant characteristics connected with the abstinence rate achieved, which in turn could explain the absence of differences between abstinence rates in both treatments. Even thought it is true that both groups of patients did not show statistically significant differences on a number of demographic and clinical variables (gender, age, marital status, education level, profession, number of cigarettes smoked, nicotine addiction, attendance at treatment sessions), it is clear that there are many other variables that could predict abstinence (Míguez & Becoña, 1997; Ockene et al., 2000), and that the absence of randomisation makes even likely the possible occurrence of differences between groups regarding said variables and hence their possible influence over the results obtained in this research.

The second limitation has to do with the procedure used to measure abstinence, as the use of self-reports is still controversial. However, a large body of data suggest that self-reports are accurate even in low-intensity interventions. Disconfirmation rates in these situations can be as low as 2%–4% (Jolicoeur et al., 2000). In fact, in this research we were able to measure abstinence through CO-oximetry in the exposure group's post-treatment stage – with results that completely confirmed the abstinence self-report data, as the level of CO in 65.4% of patients who underwent the treatment with exposure was below 8 ppm at the post-treatment stage. In addition, the reliability of responses provided in self-reports in Spain was estimated at 71.4% for telephone interviews (Nebot

et al., 1990). Thus, using this datum, it could be estimated that the abstinence rates obtained in both treatment programmes (with and without exposure) reached 43.7% during post-treatment, 28.7% at six months and 36.1% at twelve months. These rates compare well, and even exceed, the rates obtained in previous research on the efficacy of cognitive-behavioural therapy, nicotine patches or combination of both (Fiore et al., 1994; García-Vera & Sanz, 2006; Sánchez Meca et al., 1999) – and which are encouraging when compared with the abstinence rates corresponding to individuals who have not undergone any treatments (3%-5%) (García-Vera & Sanz, 2006).

Finally, the third limitation in this study is the small number of patients included in both treatment groups (a total of 48 patients at the post-treatment and one-month follow-up stages, and 36 patients at the six- and twelve-month follow-up stages), which questions this research's statistical power to find statistically significant differences in abstinence rates between the exposure and non-exposure treatments. In fact, this is a highly plausible possibility as regards to the results obtained at the six- and twelve-month follow-up stages, as, even though the exposure treatment gave higher abstinence rates than the non-exposure treatment (25.9% more abstinent patients at the six-month follow-up and 30.3% more abstinent patients at the twelve-month follow-up) said differences did not appear to be statistically significant. Therefore, it may be necessary to replicate the results obtained in this research with a largest sample of smokers to ensure the required statistical power and, where possible, an experimental design, to increase the chances of reaching firmer and safer conclusions regarding additional therapeutic advantages of including exposure techniques in smoking cessation programmes combining cognitive-behavioural therapy with nicotine patches.

ROLE TECHNIK VYSTAVENÍ ÚČINKŮM V MULTIKOMPONENTNÍ LÉČBĚ VEDOUCÍ K ODVYKNUTÍ KOUŘENÍ

Abstrakt: Hlavním účelem tohoto průzkumu je vyhodnotit to, zda přidání terapie vystavení účinkům do kombinace multikomponentních kognitivně-behaviorálních terapií a terapií s dávkami nikotinu zvyšuje účinnost této kombinace při přestání v kouření. Tento výzkum zahrnoval porovnání výsledků získaných ze dvou programů léčby, které kombinovaly kognitivně-behaviorální techniky s dávkami nikotinu s tím, že jeden zahrnoval a druhý nezahrnoval terapii vystavení účinkům.

Klíčová slova: multikomponentní kognitivně-behaviorální terapie, odvykání kouření, účinnost léčby odvykání kouření