RELAPSE IN SMOKERS WHO QUIT WITH A PSYCHOLOGICAL TREATMENT: A GENDER ISSUE?

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EXTENDED SUMMARY

Introduction

Although the prevalence of daily smokers has decreased in all developed countries due to a great variety of factors, smoking remains the leading preventable cause of morbidity and mortality world wide. In Spain tobacco use is directly responsible for 58.573 deaths annually, which represents the 16.15 % of all deaths that occur each year (Hernández-García et al., 2010).

Currently, we have several effective treatments for smoking cessation including pharmacotherapy, self-help materials, counseling and psychological treatments, which are the first choice in the therapeutic approach of nicotine dependence (Becoña, Miguez, López, & Fernández del Río 2010; Fiore et al, 2008; Hartmann-Boyce, Stead, Lancaster and Cahill, 2013; Patnode et al, 2015; Schlam and Baker, 2013; Siu, 2015). Although several studies support the efficacy, effectiveness and efficiency of smoking cessation treatments, relapse still is a common phenomenon among those who achieved abstinence (Becoña et al, 2010; Piasecki, 2006).

Regarding the differences between men and women in smoking behavior, previous research found that women, compared to men, use tobacco for mood management and forappetite and weight control (Jensvold, Hamilton, & Halbreich, 1996). Moreover, women tend to smoke fewer cigarrtes per day, inhale less deeply and prefer brands with less nicotine content (Grunberg, Winders and Wewers, 1991). About gender differences in relapse, the results of previous research are inconclusive. While some studies have found that men are more likely to remain abstinent than women (Bohadana et al., 2003; Ferguson et al., 2003) others did not find significant differences (Gonzales et al., 2002, Gritz et al., 1998). This highlights the need to further investigate the role of gender in the relapse processbecause if it is true that women have more trouble than men to stay abstinent, the design of treatments for smoking cessation and relapse prevention should takegender into account (Bohadana et al., 2003).

The aim of this study was to analyze whether there were differencesin the relapse curve according to gender in men and women who participated in a cognitive-behavioral smoking cessation treatment.

Method

The sample was composed of 266 individuals (59.8 % women) who were abstinent at the end ofa psychological treatment to quit smokingat the Smoking Cessation and Addictive Disorders Unit atthe Faculty of Psychology of the University of Santiago de Compostela (Spain). The smokers were selected according to the following inclusion criteria: age 18 or over, a whish to participate inthe treatment programme, smoking ≥ 10 cigarettes per day, and having completedall the questionnaires in the pretreatment assessment. Exclusion criteria were: diagnosis of a

severe mental disorder (bipolar disorder and/ or psychotic disorder), concurrent dependence on other substances, having received the same treatment programme or another effective treatment for smoking cessation (nicotine replacement therapy, bupropion or varenicline) during the previous year, suffering from a physical pathology with a high life risk which would require immediate individual intervention (e.g., recent myocardial infarction), smoking tobacco other than cigarettes (e.g., cigars), and failing to attend the first treatment session.

Before startingtreatment, all the smokers completedthe 56-item Smoking Habit Questionnaire (Becoña, 1994), designed to gather information on sociodemographic variables (gender, age, marital status, educational level) and tobacco use (i.e., number of cigarettes smoked per day). Information related nicotine dependence was obtained through the Fagerström Test for Nicotine Dependence (FTND, Heatherton, Kozlowski, Frecker, & Fagerström, 1991; in its validated Spanish version by Becoña & Vázquez, 1998), using a cut-off point of 6 or more.

To assess smoking status (smoker/non-smoker) at the end of treatment and at 1, 3, 6 and 12 month follow-ups we used self-report abstinence corroborated through the measure of carbon monoxide in expired air (CO) using the Micro IV Smokerlyzer (Bedfont Technical Instruments Ltd, Sittingbourne, Kent, UK).

During the pretreatment assessment a face-to-face interview was conducted and the above described instruments were administered. All the smokers gave their informed consent for participation, and the study was authorized by the Bioethics Committee of the University of Santiago de Compostela.

After the initial assessment the participants started the Smoking Cessation Program (Becoña, 2007). It is a standardized and manualized cognitive-behavioral treatment composed of 6 sessions in groups of 4-10 smokersAfter treatment face-to-face follow-ups at 1, 3, 6 and 12 months were conducted. Those participants

who were not located were considered to be smokers at the same level (in terms of number of cigarettes and nicotine content) as in pretreatment assessment (West et al., 2005).

All statistical analyses were performed using the software SPSS version 20. The significance level was set at $\leq .05$. In order to determine sample characteristics, we carried out descriptive statistical analyses. To test the difference between women and men, we used Pearson's $\chi 2$ statistic for numerical variables and Student t test for quantitative variables.

Results

During the period under review, there have been In terms of sociodemographic and smoking characteristics, we only found significant differences in the number of cigarettes smoked per day before starting treatment ($t = 2.76$; $p \leq .01$). Women reported smoking fewer cigarettes/day than men in the pretreatment assessment –18.6 vs. 20.9 cigarettes/day, respectively– (Table 2).

Of the 266 participants, 29.3 % ($n = 78$) relapsed during the first month. The relapse rate was 39.1 % ($n = 104$) in the three months' follow-up and 47.7 % ($n = 127$) at six months after the end of treatment. A year later, the relapse rate was 55.3 % ($n = 147$). When analyzing the relapse curve based on gender (Figure 2), no significant differences were found in any of the time points assessed.

Discussion

In general, the results show that a significant percentage of relapses occur during the first three months after quitting smoking, and as time aftertreatment increases, the percentage of participants who remain abstinent decreases. Kirshenbaum et al. (2009) in a review about nicotine dependence treatment found similar results and theyconcluded that the likelihood of relapse is greater during the first 70 days

after quitting. Similar results were found in Míguez and Becoña (2008).

Regarding sociodemographic and smoking variables, we only found significant differences between men and women in the number of cigarettes smoked per day before treatment. Our results are consistent with previous studies (Grunberg et al., 1991) that indicated that women smoke less cigarettes per day than men.

No significant differences were found between men and women in the relapse curve. This result is in line with studies like that of Gritz et al. (1998), who did not findsignificant differences in relapse according to gender. These authors followed 12.313 men and 5.523 women during two and a half years after receiving a smoking cessation treatment. Similar results were found by Gonzales et al. (2002) in a 45 weeks follow up.

However, other studies found that women are more likely to relapse than men (Bohadana et al., 2003; Ferguson et al., 2003; Ward et al, 1997; Wetter et al, 1999), and they suggest thatwomen tend to have a higher behavioral dependence than men (Bohadana et al., 2003) and to use tobaccofor stress management and weight control (Ferguson et al., 2003).

In this sense, it is possible that the absence of significant differences between men and women in the results of the present study is due to the type of smoking cessation treatment, which include effective psychological tools (strategies for mood and anxiety management, problem solving, weight control, etc.) to cope with some of the main causes of relapse. It is possible that women take special advantage of these psychological techniques, that may enablethem to become less likely to relapse.

Some limitations of the present study should be noted. The results cannot be extrapolated to smokers in the general population, as smokers who seek specialized treatment for smoking cessation tend to be qualitatively different from those who do not (Becoña, López-Durán, Fernández del Río, & Martínez, 2014; Le Strat, Rehm, & Le Foll, 2011). Moreover, the sample size is relatively small, so it would be important to use larger samples in future studies.

Among the strengths, this study provides very relevant information about the psychological treatment of smoking cessation and more specifically about smoking relapse. The results confirm that psychological treatments for smoking cessation are effective and work equally well for both men and women and highlight the importance of continuing the research on relapse prevention.