

Cognitive behavioral therapy treatment for smoking alcoholics in outpatients

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OBJECTIVE: Cognitive Behavioral Therapy is a therapy based on cognitive and behavioral techniques: cognitive psychological education, cognitive restructuring, interoceptive exposure, breathing exercises and relaxation, all aiming at behavioral changes. The objective of the study was to determine the effectiveness of a specific model of Cognitive Behavioral Therapy for alcoholic outpatients in the treatment of smoking.

METHOD: Sessions were carried out in two stages: (1) a "stop smoking" stage lasting four weeks, with 3 sessions/week; (2) a maintenance stage beginning with 2 weeks of a single weekly session, followed by monthly sessions until the end of the one-year treatment.

RESULTS: Forty patients participated in this study, 22 men and 18 women. After a year of treatment, 24 patients had stopped smoking, whereas 16 relapsed during the course of the year; two abandoned treatment. Women showed better results: 77.8% stopped smoking by the end of the treatment, but only 45.4% of the men reached this goal.

CONCLUSION: Patients under treatment for alcoholism submitted to the tobacco treatment program; a majority of them achieved the treatment goal. A growing population of alcoholics and smokers are looking for treatment; this points to the need for a follow-up treatment program for smoking in an Alcoholism Treatment Unit. Cognitive Behavioral Therapy proved to be effective in the treatment of tobacco dependency mainly in women.

KEYWORDS: Addiction; comorbidity; anxiety; withdrawal.

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INTRODUCTION

In recent years a close association between tobacco and alcohol dependencies has been established, making smoking cessation a challenge, because it is the leading cause of mortality among drug users.¹ It has been shown that alcohol abuse or dependence may increase the possibility of tobacco dependence. Alcoholism has been shown to be a predictor of persistent consumption of tobacco.² According to Chaieb et al.³ there is a predominance of smokers among alcoholics: in a study population of 258 individuals, 129 (50%) were identified as alcoholics, of which 67% were smokers; among the 129 non-alcoholics only 44% smoked, meaning that 74% of non-smokers were non-alcoholic.

Tobacco smoking begins early in life and lasts for a long time, the same being true about tobacco consumption in alcoholic individuals.³ Heavy smokers are the people with the highest level of alcohol abuse when both are used.⁴

Cognitive Behavioral Therapy has been shown to be effective in the treatment of smoking alcoholic patients.⁵ Its use for anti-tobacco treatment is based on the

assumptions that (i) cognitive activity influences behavior, (ii) cognitive activity can be monitored and changed, and (iii) the desired behavior can be attained by cognitive change.

According to Kalman et al.,⁶ the cognitive-behavioral approach is used in the treatment of smoking by allowing changes in the lifestyle of the individuals, as well as modifications of dysfunctional beliefs and behaviors that relate to the act of smoking. This is an active and pragmatic approach where the alcoholic individual learns to detect smoking relapse situations and develops strategies to cope and to prevent the repeat happenings.⁷

Nicotine reaches the brain in 10 seconds.⁸ Systemic actions of nicotine are mediated by Nicotinic Receptors, found in the central and peripheral nervous systems.

Dependence can involve specific psychoactive substances, such as alcohol and tobacco. Both substances are described in the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV),⁹ where alcohol has the diagnostic label F10 and tobacco, F17. Dependence syndrome is described as a set of behavioral, cognitive and physiological phenomena that develop after repeated use and are typically associated with a powerful desire to consume the drug.

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The difficulty of controlling consumption and the persistent use in spite of adverse consequences, as well as the highest priority given to drug use to the detriment of other activities and obligations, leads patients to increased drug tolerance and, ultimately, to a more intense physical withdrawal condition.

The objective of this study is to show that treatment with Cognitive Behavioral Therapy can be an effective resource for the treatment of smoking in individuals with more than one chemical dependency (alcohol and tobacco), leading to the interruption of the smoking habit.

■ METHODS

The study was conducted during the period of March 2011 to March 2012 in the Alcoholism Treatment Unit of Municipal Institute Philippe Pinel, in Rio de Janeiro. The Alcoholism Treatment Unit offers hospitalization with 16 male and 4 female beds, an outpatient facility, day hospital and treatment for smoking. Patient-monitored daytime activities at the hospital include a gardening workshop, a library and video workshop, all coordinated by psychologists. It is up to the monitor to explain the work of the workshops and supervise the patients in the execution of task activities.

Patients are initially evaluated and forwarded by the emergency wards of the Municipal Philippe Pinel Municipal Institute for admission or outpatient treatment. The population comes from all regions of the city of Rio de Janeiro and from other cities in the state. Homeless people are included in this population. Patients of both sexes with indication for psychotherapy are forwarded during the admission procedure with the purpose of joining the outpatient treatment.

Patients' families are also assisted through weekly meetings with psychologists.

The sample was randomly collected and consisted of 40 alcoholic patients (22 men and 18 women); they were included from the outpatient clinic for the treatment of smoking. Diagnosis was made by a staff psychiatrist, through the application of the International Neuropsychiatric Interview (MINI),¹⁰ through personal and family history collection, and through the patient's smoking history. The Fargestron test¹¹ was used to evaluate the degree of physical dependence.

Inclusion criteria for this study were: age between 18 and 75 years old, with a diagnosis of alcoholism (International Statistical Classification of Diseases and Related Health Problems-Psychiatry and Neurology Tenth Revision – ICD-10)¹² and with a regular habit of smoking. Exclusion criteria were the presence of mental retardation and diseases serious enough to prevent the ministration of the follow-up protocol. Participants signed an informed consent in accordance with the code of ethics in research.

The treatment lasted one year, being conducted in 2 stages: Stage 1 "Quit smoking" and Stage 2 "Maintenance" (Relapse prevention).

The first stage lasted four weeks (five if necessary), with sessions of Cognitive Behavioral Therapy. During the sessions the theme of smoking treatment with Cognitive Behavioral Therapy was addressed. At the end of each week, a manual was offered to the patient with the sequence of the treatment.

The treatment differs depending on whether the patient is a man or a woman. For women, patients and psychologists

carry out treatment jointly. The aims of treatment are to break the social prejudice against alcoholism, to improve quality of life and to rescue the sense of citizenship. The work is performed under a shared management regime (patients and psychologists), where activities (workshops) are jointly agreed upon. The patients attend the workshops three times a week; on one of the days, a volunteer teaches the techniques of sewing and painting of objects; on the other days the volunteer is replaced by one of the patients who helps the group.

Income is generated through the sale of the products of the workshops and the patients earn a percentage in the manufacture (40%) and sale (40%). The residual 20% is kept in a group fund. Men perform activities in the day hospital, namely gardening, library and video workshop.

The second stage, maintenance, deals with the prevention of relapse. In this stage it is important to distinguish between a lapse, as opposed to a relapse. A lapse consists of an isolated event of tobacco use while a relapse is the establishment of a new usage pattern or the return to the old pattern. During the first two maintenance weeks, patients attended a single weekly session. After that, patients attended two sessions spaced 15 days apart, then monthly sessions until the end of the one-year treatment.

It is essential that the individual remain tobacco-free to continue the treatment.

Psychotherapy, when required, is accompanied by nicotine supplementation (adhesive and gum) according to the degree of dependence established by the Fargestron test.

Instrument

An interview is always conducted, in which we approach the patient history including clinical diseases, existence of familiar smokers, patient relationship with tobacco, existence of psychiatric disorders in the family as well as their motivation for treatment.

We can evaluate motivation according to three moments: (i) **Pre-contemplative**, patient smokes and is not motivated to stop; (ii) **Contemplative**, patient is motivated to stop, but no date of stoppage has been stipulated within the coming days; (iii) **Action**, patient already has a date or is motivated to stop within a month.

Intervention

Cognitive Behavioral Therapy protocol: the first phase

First session. Initial questions: Why do you smoke? How does it affect your health? Points to be made: the harm caused by tobacco, its disease-causing components, such as risk of impotence, stroke, increased coughing, sneezing, chronic bronchitis, emphysema, cancer, coronary artery disease, peptic ulcer disease, peripheral vascular disease, and loss of taste. Other topics discussed are: ambivalence, consumption of cigarettes, motivations to quit smoking, most difficult obstacles to reach the goal, time of first daily cigarette. It is important that the patient be made aware that the urge to smoke is transitory and be advised that the methods to quit smoking can be abrupt or gradual (Reduction or Postponement). For a Fargestron test above 5 points, the suggested method to stop smoking is the abrupt one, because of a high or very high level of dependence. Below 5 points, the method of quitting may be gradual (Reduction or Postponement).

In the abrupt mode, the patient has to quit smoking on an immediate given date.

In the Reduction mode, the patient must keep an account of smoked cigarettes and reduce this in a daily predetermined way. A date for cessation is established. Patients are advised to bear in mind that a decrease rate by only one cigarette per day is insufficient, unless he already smokes very few cigarettes per day.

In the Postponement mode, the patient delays the time at which he smokes his first daily cigarette by a predetermined number of hours each day. The patient must increase this delay by 2 hours every day; in this modality, reduction of the number of consumed cigarettes becomes irrelevant.

Second session. The point to be made here: the first few days without smoking. The topics discussed with the patient are: assertiveness, withdrawal syndrome, reinforcement of the date for quitting. Assertiveness is the patient's capacity to develop his/her ability to express thoughts and feelings and to deal with stressful situations that have to do with smoking.

The patient is checked about the following physical symptoms that can occur during abstinence from tobacco: sweating, headache, dizziness, coughing, drowsiness, increased appetite, insomnia, cramps, tingling in the extremities of the fingers and toes, tension, difficulty concentrating, disturbance in the intestine and stomach.

Patient must understand that withdrawal signs and symptoms last from 1 to 3 months, being more pronounced in the first month. Intensity depends on the degree of dependence. The symptoms occur because the body is recovering toward normal metabolism, which was formerly compromised by the cigarettes. Some symptoms are purely psychological such as: anxiety, restlessness, irritability and tension. Because stress and boredom can worsen abstinence, it is important for the patient to identify stressful and boring situations, thus enabling the change from negative to positive thoughts.

During this second session, respiratory and body relaxation practices¹³ should be taught.

Third session. The main point here is the overcoming of obstacles to remain smoke-free. The topics discussed with the patient are: strengthening decision about the end-date; review of obstacles that have been overcome and those still remaining ahead; valuation of anticipated benefits after stopping. In addition to symptoms, another factor may occur, namely the fear of abstinence which may lead the patient to doubt whether he or she can stop smoking. A point to be addressed is the reward system that makes the patient quit smoking, such as gifts and eating more than usual. If overeating occurs, weight gain may result and referral to nutrition counseling is advised.

Fourth session. The main point here relates to the benefits obtained after smoking stops. The topics discussed with the patient are: improvements in quality of life, detection of possible pitfalls to remain smoke-free. Resort to manuals that are given at the end of the sessions, and particularly in moments of rift, call for professionals and other patients.

Second-stage Maintenance

The maintenance sessions discuss how the patient is feeling without a cigarette in his or her life, and how he or she is manipulating the resources learnt during the first phase.

The patients must be made aware that smoking is not the answer to their problems no matter how difficult the problems are to cope with. Patients must also be made

to understand that their assertiveness and determination will be essential to ensure abstinence.

Medication

Nicotine replacement therapy is made using adhesive prescribed by the psychiatrist of the team and aims to relieve the symptoms of withdrawal. The medication is given according to the Fargestron test results if they reach high (6 to 7) or very high (8 to 10) values. Below these values there is no indication for the use of the adhesive. In this series, patients used adhesive and gum. The adhesive was administered in three doses (21, 14 or 7 mg applied sequentially), related to cigarette consumption by the patient.

The gum was used in doses of 2 and 4 mg/per unit, according to the consumption of cigarettes, with a maximum of 15 gums a day. Because release of nicotine from gum is slower and absorption is through the buccal mucosa, patients were instructed to keep the gum for 30 minutes distributed between both cheeks. In an emergency situation, the gum can be used as a last resort. This cannot, however, become a substitute for cigarettes. Patients cannot wear an adhesive patch while smoking because a nicotine overload may cause intoxication.

RESULTS

Table 1 displays demographics for all patients segregated between smokers vs. non-smokers. In all, 24 patients (60%) had positive results for the treatment, i.e. had stopped smoking at the end of one year of therapy. There was a statistically significant difference regarding the sex of those who managed to quit smoking.

Five patients stopped smoking but did not retain the result at the end of treatment.

Women showed significantly better results with 77.8% of the women quitting at the end of treatment, vs. only 45.4% of the men.

Other observations which may be useful: (i) five patients stop smoking, but did not keep the result by the end of treatment; (ii) among all the successful quitters, 11 (45.8% of successful) had relapses during treatment.

DISCUSSION

The sample studied by Chaieb et al.³ presented an association between smoking and alcoholism. Alcoholism in their sample was more prevalent in low-income smokers, with low cultural and professional levels.

The association between smoking and alcoholism was also found in our study. A factor that contributes to the occurrence of the use of these drugs is the fact that they are legally obtainable. We can raise the hypothesis that free access to them contributes to their high consumption.

Prochaska et al.¹⁴ claim that interventions for smoking cessation concomitant with the treatment of other addictions increases the period of abstinence. Smokers with a previous history of problems with alcohol are more capable of stopping the use of tobacco than smokers without this history. They attribute this to the fact that these subjects developed skills to solve their problems with alcohol that help to minimize dependence on nicotine and consequently respond to minimum interventions for tobacco cessation.

Peterson et al.¹⁵ note that nicotinic receptors are related to the pathophysiology of various mental disorders and to the

Table 1 - Demographic data for all patients, segregated according to quitting/not quitting smoking

| | All the patients (n = 40) | Patients who stopped smoking at the end of the treatment (n = 24 – 60% of total) | Patients unsuccessful in quitting smoking | Statistical significance |
|--------------------------------------|--|--|---|---|
| Age | Avg.: 52.18 ± 10.85 yrs Min.: 24. Max: 75 | Avg.: 53.83 ± 8.94 yrs Min.: 27. Max: 75 | Avg.: 53.83 ± 8.94 yrs Min.: 27. Max: 75 | Non-significant |
| Sex | 22 male 18 female | 10 male (45.4%)* 14 female (77.8%)* | 12 male 4 female | Male vs female: $\chi^2 = 4.31$; p = 0.03 |
| Education | Elementary: 13 (33%) Middle: 16 (40%) Higher: 11 (27%) | Elementary: 8 (33%) Middle: 9 (38%) Higher: 7 (29%) | Elementary: 5 (31%) Middle: 7 (44%) Higher: 4 (25%) | Non-significant |
| Quit smoking during treatment (1 yr) | 29§ | 24 (100%) | 5 | |
| Relapse during treatment (1 yr) | 16§§ | 11 (45%) | 5 | |
| Quit at the end of treatment | | 24 (100%) | 0 | |

*: percent of males or females who quit smoking

§: includes the 24 who remained non-smokers at the end of treatment

§§: includes the 11 relapses who recovered and were successful quitters

¶: temporary relapses, recovered by the end of treatment; (percentage of relapses among successful quitters)

mechanisms of action of other psychotropic drugs such as alcohol. From this understanding of the neurobiology of nicotine addiction and usage, it is possible to understand why they are such common mental disorders. Tobacco and alcohol are the two most consumed drugs worldwide, because they are legal and freely sold drugs. However, unlike alcohol, tobacco does not generate socially inconvenient behaviors. In the case of the association of these two drugs, there is evidence that drinking starts before smoking.¹⁵

According to the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV),⁹ initiation in the use of alcohol and other drugs increases the risk of co-occurrence of nicotine addiction as also observed in the present study. We have found in this study that there is a great deal of distress in outpatients and that this can be a facilitator for the development of chemical dependency. This can be revealed as some personality traits, for example, emotional regression, immaturity, anxiety, insecurity, inadequacy and weakness of the ego. Tobacco addiction acts as an escape mechanism for people with traces of shyness or fear of taking initiatives, and serves to remove responsibility; all of this is due to low self-esteem and negative self-image.

Fiore⁸ states that nicotine replacement therapy results in the occurrence of a reduction of abstinence in patients wanting tobacco cessation; Cognitive Behavioral Therapy alone is an effective alternative for the treatment of smoking.

In the study by Holt et al.,¹⁶ in the sample of 29 alcoholic and 32 smoker patients tobacco relapse also leads to alcohol relapse. In our study, 6 patients relapsed to tobacco, but not to alcohol.

According to Fisher et al.¹⁷ the choice of smoking treatment proposed by the Brazilian National Health Service (Sistema Único de Saúde) is related to the efficacy observed in previous studies that have shown that working with the motivation of the individual leads to good results as regards tobacco cessation.

CONCLUSION

We conclude that the Fargestrom test for physical dependence was an effective assessment tool. We found that 60% of the sample attained the goal of the study of quitting smoking after 1 year of treatment. Relapse was a part of the treatment for reaching the goal of quitting smoking. The maintenance of the patient's tobacco-free lifestyle is independent of completion of treatment, because this is linked to emotional stability, family and social conditions.

RESUMO

OBJETIVO: A terapia cognitivo-comportamental baseia-se em técnicas cognitivas e comportamentais: educação cognitiva psicológica, reestruturação cognitiva, exposição interoceptiva, exercícios de respiração e relaxamento, tudo visando a mudanças de comportamento. O objetivo do estudo foi demonstrar a eficácia de um modelo específico de terapia cognitivo-comportamental para pacientes ambulatoriais alcoólicos no tratamento do tabagismo.

MÉTODO: As sessões foram realizadas em duas etapas; (1) estágio "parar de fumar" com duração de quatro semanas, com 3 sessões/semana; (2) fase de manutenção começando com 2 semanas de uma única sessão semanal, seguido por sessões mensais até o final do tratamento de um ano.

RESULTADOS: Quarenta pacientes participaram deste estudo, 22 homens e 18 mulheres. Após um ano de tratamento, 24 pacientes haviam parado de fumar, enquanto 16 apresentaram recaída durante o decorrer do ano; dois abandonaram o tratamento. As mulheres apresentaram melhores resultados: 77.8% pararam de fumar no final do tratamento, mas apenas 45.4% dos homens atingiram essa meta.

CONCLUSÃO: A maioria de um grupo de pacientes incluídos num tratamento para o alcoolismo e submetidos ao programa de tratamento do tabaco atingiu o objetivo do tratamento, e abandonou o tabagismo. Uma população crescente de alcoólatras e fumantes está procurando tratamento; isso aponta para a necessidade de um programa de tratamento de acompanhamento para fumar em uma Unidade de Tratamento de Alcoolismo. A terapia comportamental cognitiva mostrou-se eficaz no tratamento da dependência ao tabaco, principalmente em mulheres.

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