Intensive Clinic Intervention Plus Psychodrama in Smoking Cessation and Effects on Cessation Outcome

Sigara Bırakmada Yoğun Klinik Girişime Psikodrama Eklenmesi ve Bırakma Sonuçları Üzerine Etkisi

Zeynep Ayfer AYTEMUR, MD, Assoc.Prof.,[a]
Bülent PİŞMİŞOĞLU, MD, Msc,[b]
Oğuz KILINÇ, MD, Prof.,[c]
Emine PİŞMİŞOĞLU, Nrs.Msc,[d]
S. Savaş HACIEVLİYAGİL, MD, Assoc.Prof.,[a]
Canan KARAMAN, MD[c]

[a]Department of Pulmonary Diseases, İnönü University Faculty of Medicine, Malatya
[b]İzmir Rest Home, Elderly Care and Rehabilitation Center
[c]Department of Pulmonary Diseases, Dokuz Eylül University Faculty of Medicine,
[d]Nursing of Infectious Diseases Clinic, Atatürk Training and Research Hospital, İzmir

Geliş Tarihi/*Received:* 28.03.2011
Kabul Tarihi/*Accepted:* 01.12.2011

Yazışma Adresi/*Correspondence:*
Zeynep Ayfer AYTEMUR, MD, Assoc.Prof.
İnönü University Faculty of Medicine, Department of Pulmonary Diseases, Malatya, TÜRKİYE/TURKEY
zeynep.ayfer@gmail.com

ABSTRACT Objective: Psychodrama is a therapeutic discipline, which uses action methods, role training, and group dynamics to facilitate a constructive change in the lives of participants. This study was run to assess the effectiveness of psychodrama on intensive clinic intervention for smoking cessation. **Material and Methods:** The process and outcome of smoking cessation program using intensive cognitive-behavioral therapy (CBT) and pharmacotherapy (PT) or CBT and PT plus psychodrama was studied on 113 participants. Sixty-one participants were randomized in CBT and PT plus psychodrama group, and 52 participants were randomised in CBT and PT group. Success rate of smoking cessation was assessed at the end of the first, third and sixth months. **Results:** At the end of the first and third months, the rates of smoking cessation were 80.3% and 63.9% in study group, and 59.6% and 46.2% in control group (p=0.014 and p=0.044, respectively). In the sixth month, the rate of smoking cessation was 50.8% in the study group and 38.5% in the control group (p=0.130). **Conclusion:** In this study, we concluded that the intensive clinic intervention plus psychodrama increased the success rate of smoking cessation in the early period.

Key Words: Smoking cessation; psychodrama; drug therapy

ÖZET Amaç: Psikodrama, katılımcıların yaşamlarında yapıcı değişimi kolaylaştıran davranış yöntemlerini, rol eğitimini ve grup dinamiklerini kullanan tedavi edici bir disiplindir. Bu çalışma, sigara bırakmada yoğun klinik girişim üzerine psikodramanın etkisini değerlendirmek amacıyla yapıldı. **Gereç ve Yöntemler:** Çalışmada, 113 katılımcı üzerinde yoğun bilişsel-davranışsal tedavi (BDT) ve farmakoterapi (FT) veya BDT ve FT'ye ek olarak psikodrama kullanılarak sigara bırakma süreci ve sonuçları değerlendirildi. Altmış bir olgu BDT ve FT + psikodrama grubuna ve 52 olgu BDT ve FT grubuna randomize edildi. Birinci, üçüncü ve altıncı ayların sonunda sigara bırakmadaki başarı oranları değerlendirildi. **Bulgular:** Birinci ve üçüncü ayların sonunda sigara bırakma oranları çalışma grubunda %80,3 ve %63,9, kontrol grubunda %59,6 ve %46,2 idi (sırasıyla, p=0,014 ve p=0,044). Altıncı ayda, sigara bırakma oranı çalışma grubunda %50,8 ve kontrol grubunda %38,5 idi (p=0,130). **Sonuç:** Bu çalışmada, yoğun klinik girişim üzerine psikodrama eklenmesinin erken dönemde sigarayı bırakma girişiminin başarı oranını artırdığı sonucuna vardık.

Anahtar Kelimeler: Sigarayı bırakma; psikodrama; ilaç tedavisi

Turkiye Klinikleri J Med Sci 2012;32(3):630-7

Tobacco use has been recognized as the leading preventable cause of death worldwide and health benefits of smoking cessation has been well documented.[1,2] However, only a minority of tobacco users can achieve permanent abstinence in an initial quit attempt. Majority of the users persist in tobacco use for many years and they typically cycle through multiple periods of remission and relapse. Modern approaches

doi: 10.5336/medsci.2011-23965

to treating tobacco use and dependence reflect the chronicity of tobacco dependence. If tobacco use is recognized as a chronic disease, clinicians will better understand the relapsing nature of the condition and the requirement for ongoing rather than acute care.[3,4] For most of the cases, intensive clinic interventions are provided by clinicians who are specialized in this area. Specialists have the skills, knowledge and training to provide effective interventions with regard to intensities. Substantial evidence shows that intensive clinic interventions produce higher quit rates than less intensive interventions do.[1,3] Individual, group, and telephone counseling are some of the effective methods of intensive intervention.[3,5] Some types of intervention strategies are particularly effective. Practical counseling (problem solving/skills-training approaches) and the provision of social support are associated with significant increases in abstinence rates. Although intensive clinic interventions provide high abstinence rates, the rate of successful smoking cessation within one year is around 24%.[1,6] Furthermore, most of the studies report that, behavioral interventions have moderate success in quitting tobacco within the first 6 months.[7] Killen et al investigated the effectiveness of extended (12 weeks) cognitive behavioral therapy in promoting longer-term smoking abstinence and reported a rate of successful abstinence of 45% at the end of week 20.[8] The search for optimal cost-effective, acceptable, new and different treatment interventions continues as best treatment modalities can only offer modest success in treatment outcome.[3,7]

Psychodrama, developed by Dr Moreno, is a method of group psychotherapy in which the subject can be helped to explore the psychological dimensions of his or her problems through the enactment of conflict situations.[9] It is mostly used as a group work method, in which each person in the group can become a therapeutic agent for each other. The American Society of Group Psychotherapy and Psychodrama and the various European national associations of psychodrama permit practitioners in a number of professions -e.g., clinical psychology, special education-to perform psychodrama. Psychodrama is a flexible method and it can fit many disciplines despite the different goals and therapeutic directions they may have. Psychodrama facilitates insight, personal growth and integration on cognitive, affective, and behavioral levels. It clarifies issues, increases physical and emotional well being, enhances learning and develops new skills. This method is often conducted on a stage where props can be used and has strong elements of theatre.[9] The audience is fully involved with the dramatic action. Audience involvement is either through personal interest in the concerns of the leading actor (protagonist) or through playing some roles of the drama, which helps the protagonist.[10] Psychodrama has many functions such as gaining insight, examining the reality and constituting alternative ideas, learning and obtaining behavioral modification by performing real life problems on the stage in a theatrical manner. Since this method is thought to improve the consciousness it has been used in alcohol and substance addiction treatment programs.[11,12] According to our knowledge and literature search, there is no data on the effectiveness of psychodrama on smoking cessation. Use of psychodrama as an additional method in smoking cessation may increase success rates and prevent relapses. The purpose of our study was to figure out the effectiveness of psychodrama that was used in additon to intensive clinic intervention as a smoking cessation program.

MATERIAL AND METHODS

STUDY DESIGN

The smokers who participated in the smoking cessation program of the Department of Pulmonary Diseases in Ege University and Dokuz Eylül University were included. Institutional Review Boards approved the protocol before initiation of the study.

STRUCTURE OF SMOKING CESSATION CLINICS

The smoking cessation clinics in the Department of Pulmonary Diseases in Ege University and Dokuz Eylül University provide educational workshops and one-to-one counseling, testing for

suitability for pharmacotherapy, clinic evaluations, follow up and patient support.

STUDY PROTOCOL AND POPULATION

The study population included 127 subjects who wanted to quit smoking. Initially, smokers who presented to the Ege University and Dokuz Eylül University smoking cessation clinics were invited to meetings and were informed about the routine smoking cessation program. Informed consents were obtained from those who agreed to participate in the study. Cases who attended the meeting were randomly assigned to one of two treatment groups. Block randomization method was used; accordingly, a randomization code was set up and sealed envelopes were prepared before enrollment by the head nurse of the Department of Chest Diseases in Ege University Faculty of Medicine.

Sixty-seven smokers were enrolled in the standard intensive cognitive-behavioral therapy (CBT) and pharmachoterapy (PT) plus psychodrama (psychodrama group) and they were additionally informed about psychodrama and their informed consents were taken. On the other hand, 60 smokers were enrolled in the standard intensive CBT and PT group (control group). A self-reported questionnaire was used to collect data before the initiation of the study program, regarding demoghraphic and social characteristics, health and functional problems, and chronic disease history (chronic obstructive pulmonary disease, asthma, chronic cardiac failure, chronic renal failure, thyroid diseases, hypertension, diabetes mellitus, cancer, psychiatric disorders). Participants were also questioned on smoking behavior, smoking history, previous quit attempts, other habits such as alcohol consumption. Hospital Anxiety and Depression Scale (HADS) was used to determine the depressive and anxious participants.[13] An anxiety score ≥□10 and depression score ≥ 7 were considered positive. Fagerström Test of Nicotine Dependence (FTND) (score 1-10) was carried out for all participants.[14]

In accordance with the standard strategy of the cessation program, nicotine-replacement therapy (NRT) and/or bupropion were administered to subjects according to their medical status and FTND scores. Transdermal nicotine patches 21 mg/24 h were administered to the subjects for 4 weeks and thereafter the dose was escalated with 14 mg/24 h for 2 weeks and was completed within 2 months with 7 mg/24 h. Bupropion HCL150 mg/day was administered for 3 days followed by 150 mg twice a day for two months. Unlike NRT, subjects started bupropion treatment 1 week prior to cessation. Intensive CBT consisted of information on the risks of smoking and benefits of cessation and motivational support (problem solving/ skills training approaches, intratreatment professional support).[3] The aim of motivational support was to encourage the smoker to quit, to prevent the relapses, and to decrease nicotine withdrawal symptoms of the subjects. A booklet including this information was supplied. Intensive CBT was run as an initial session of minimum 30 minutes and additional 6 subsequent visits. At the subsequent visits, session length was minimum 10 minutes and counseling was carried out as single contact with the clinician. The subjects were assessed at the end of week 1, 2, 4, 8, 12 and 24 weeks. Proactive telephone interviews were performed periodically. The subjects who resumed smoking during the study period were encouraged to quit again. Continuous smoking abstinence was determined at each visit by self-report of no smoking since the previous visit. Relapse was defined as seven consecutive days of smoking one or more cigarettes or two consecutive weeks with one or more days of smoking.

Cases in the psychodrama group received the simultaneous psychodrama program beside the standard treatment program. Bülent Pişmişoğlu who was a psychodramatist and a pulmonary diseases specialist at the same time, directed the psychodrama program while Emine Pişmişoğlu who was also a psychodramatist and a specialized psychiatry nurse, was the co-director. Both psychodramatists had completed their 7 years of psychodrama training period in the Dr. Abdülkadir Özbek Psychodrama Institute, which was a member of The Federation of European Psychodrama Training Organisations and they both deserved the title of "psychodrama group director".

Psychodrama cases were divided into 6 groups that consisted of an average case number of ten. Psychodrama sessions of each group continued for 8 weeks as 2-hour sessions per week and were carried out as a model, which consisted of new games added to the technics used for alcohol and substance dependents.

By using this model, we aimed to raise awareness on physical, psychological and social losses caused by cigarette smoking as well as to improve the awareness on the roles attributed to cigarette by the dependent and their function for the self. We worked to improve the skills on valediction with cigarette; awareness on things that could replace smoking and how to apply them; controlling the abstinence symptoms and learning methods of relaxation. On the other hand, we also aimed to increase the ability of saying "no" to self-conflict; to be aware of risk situations that could cause relapses and to take measures against them; to maintain an overall well-being and healthiness status; to suggest the feeling of hope and to render the behavioral modifications permanent.

In the first session, the steps of group agreement, determination of motivation levels and teaching physical and relaxation exercises were carried out. Motivation level was measured by using a method similar to the Visual Analogue Scale. In the following sessions, the first two items were sharing experiences about the previous week followed by icebreaker games. The sessions included games on topics such as the relationship of cases with cigarette, things to replace smoking, quitting and loss, handling intensive emotions after quitting, conflicts, the relationships that can awaken the desire for smoking, measures against slipping and relapsing. In addition, the group worked on dreams. At the end of each session, feedback was obtained from the participants, emotions and ideas were shared and the overall session was evaluated. When there was spare time at the end of the sessions, imaging studies were carried out. Protagonist games and applications were put into practice responsively, according to the "now and here" principle by considering the needs of the groups.

DATA ANALYSIS

The statistics package program (SPSS 11.0 for Windows; SPSS Inc., Chicago, Illinois, USA) was used for statistical analysis. Descriptive statistics were used for basic statistical analyses. The variables were reported as mean ± standard deviation (SD) (min-max values). Mann-Whitney U test was used for comparions between the medians of two groups. Unpaired t-test was used for comparions between "age" variables of the study and control groups. Qualitative data were presented as frequencies and percentages. The characteristics (age) of the psychodrama group and the control group were compared using the two-tailed Fisher's exact test for dichotomous variables. The χ^2 testing (Yates' Corrected Chi-Square test) was used to compare smoking cessation rates between the two groups. A sample size of 113 achieves 57.0% power to detect an effect size (W) of 0.2000 using a 1 degree of freedom Chi-Square Test with a significance level (alpha) of 0.01. The calculation was carried our by PASS software. To better analyze the effects of demographic and pretreatment smoking variables on smoking cessation rates, we used the logistic regression analysis with backward variable selection method. The logistic model was done with Hosmer-Lemeshow test (Chi-Square=2.77, df=8, p=0.94). Additionally, Omnibus test of model coefficients showed that this model fitted significantly better ($p<0.001$). P values less than 0.05 were considered statistically significant.

RESULTS

Before the program started, 127 participants were enrolled and randomized. Six subjects from the psychodrama group and eight subjects from the control group dropped within the first few days of the study leaving 113 smokers to complete the trial. Seventy (62%) participants were female and 43 (38%) were male, with an average age of 47.2 years. Sixty (53.1%) participants had a university degree and 38 (33.6%) smokers had graduated from high school. The groups were compared for age, gender, education level, marital status, chronic diseases and occupational status (Table 1) with no significant difference.

TABLE 1: Demographic data and other baseline information of the participants.

	Psychodrama group (n= 61)	Control group (n= 52)	p value
Age*	48.0 ± 11.0	46.3±12.2	0.395
Gender **			0.102
Female	42 (68.8%)	28 (53.8%)	
Male	19 (31.1%)	24 (46.1%)	
Marital status **			
Married	37 (60.7%)	40 (76.9%)	
Single	8 (13.1%)	6 (11.5%)	
Divorced	12 (19.7%)	3 (5.8%)	
Widowed	4 (6.6%)	3 (5.8%)	0.154
Education level **			
University graduate	33 (54.1%)	27 (51.9%)	0.681
High school graduate	22 (36.1%)	16 (30.8%)	
Elementary school graduate	6 (9.8%)	9 (17.3%)	
Alcohol consumption (every day) **	7 (11.5%)	2 (3.8%)	0.135
Chronic diseases **†	30 (49.2%)	28 (54.8%)	0.187
Hospital anxiety-depression scale ‡			
Anxiety score	7 (0-18)	8 (1-18)	0.222
Depression score	5 (0-14)	6.(1-15)	0.064

*[mean ± standard deviation] ** [n (%)]

†**Chronic diseases:** Chronic obstructive pulmonary disease, asthma, chronic cardiac failure, chronic renal failure, thyroid diseases, hypertension, diabetes mellitus, cancer, psychiatric disorders.

‡ [Median (minimum-maximum value)]

According to the HADS scale, the anxiety score was 7.2 ± 4.5 (0-18) in the psychodrama group, and 8.1 ± 3.9 (1-18) in the control group (p=0.222). Depression score was 5.0 ± 3.4 (3-14) and 6.3 ± 3.8 (1-15), respectively (p=0.06). Seven participants (11.5%) in the psychodrama group and two (3.8%) in the control group were using alcohol regularly (p=0.135). The age of starting smoking, daily cigarette consumption, pack-years, FTND, previous quit attempts, and pharmacotherapy use in previous attempts were similar between the two groups (Table 2). Thirteen (21.3%) cases in the psychodrama group and 5 (9.6%) in the control group had not attempted to quit smoking previously. Among the cases who had attempted quitting smoking previously, 20 cases (32.8%) in the psychodrama group had tried only once, 16 (26.2%) had tried twice and 12 had tried for more than twice. Similarly, 22 (42.3%) cases in the control group had tried to quit smoking once, 13 (25%) twice and 12 more than twice. Among the cases who had tried to quit smoking, 7 (11.5%) cases in the psychodrama group used medical methods while 4 (6.6%) cases used alternative methods (such as acupuncture). The same rates were 5 (9.6%) and 3 (5.8%) in the control group, respectively. In the present study, 49 (80%) cases from the psychodrama group and 38 (73%) from the control group received pharmacotherapy. The two groups had no significant difference regarding the frequency of NRT, bupropion or their combination (Table 2).

At the end of the first month, 80.3% (n=49) of the cases in the psychodrama group had quit smoking whereas the same rate was 59.6% (n=31) in the control group (p=0.01) (Figure 1). The rate of cases who still did not smoke in the third month was 63.9% (n=39) in the psychodrama group and 46.2% (n=24) in the control group; this difference was statistically significant (p=0.04). At the end of the sixth month quit rates were 50.8% (n=31) and 38.5% (n=20), respectively; however, this difference was not significant (p=0.13). There was no signi-

TABLE 2: Comparison of smoking characteristics of the participants.

	Psychodrama group (n= 61)	Control group (n= 52)	p value
Age started smoking	18.2±6.1	19.3±5.7	0.081
Pack-years**	26 (3-140)	21 (1-90)	0.309
Cigarettes per day**	20 (2-60)	20 (5-80)	0.687
FTND score*	6 (0-10)	6 (0-10)	0.744
Subjects who received pharmacotherapy†			
NRT	32 (52.4%)	25 (48%)	0.603
Bupropion	6 (9.8%)	7 (13.4%)	
NRT+bupropion	11 (18%)	6 (11.5%)	
Withdrawal symptoms†	37 (60.7%)	32 (61.5%)	0.924
Previous quit attempts†	48 (78.6%)	47 (90.3%)	0.496
Pharmacotherapy use in previous attempts†	7 (11.5%)	5 (9.6%)	0.931

*[mean ± standard deviation]. ** [Median (minimum-maximum value)]. †[n (%)].
FTDN: Fagerström Test of Nicotine Dependence; NRT: Nicotine replacement therapy.

ficant difference in quitting success rates between the cases who did and did not receive pharmacotherapy (p>0.05).

Logistic regression analysis was used to assess the predictive factors for stopping smoking. This analysis showed that independent predictors of staying free from cigarettes were older age (p=0.017) and pack-years (p=0.007) (Table 3).

DISCUSSION

This study showed that the intensive clinic intervention (CBT and PT) plus psychodrama increased the success rate of smoking cessation in the early period. The rate of cases who were not smoking at the end of the first month was 80.3% in the psychodrama group and 59.6% in the control group (p=0.01). The same rates were 63.9% and 46.2% (p=0.04), at the end of the third month and 50.8% and 38.5%, at the end of the sixth month. Although the difference was not significant, success rate was higher in the psychodrama group than in the control group (p=0.13). Older age and pack-years were independent predictors of success in quitting.

The results of this study are particularly important in that the addition of psychodrama to intensive interventions increased the success rates for cessation of smoking. The success rates of the psychodrama group were significantly higher in the first 12-week period. Thus, we could predict that,

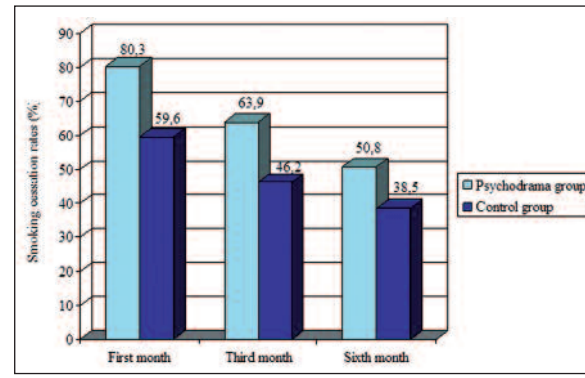

FIGURE 1: The success rates of smoking cessation according to months (The rates of smoking cessation were 80.3% and 63.9% in the psychodrama group at the end of the first and third month respectively (p=0.014, p=0.044). In the sixth month, the rate of smoking cessation was 50.8% in this group (p=0.130).
(See for colored form http://tipbilimleri.turkiyeklinikleri.com/)

the effect of psychodrama on the motivation of cases would last, if the program had continued.

Intensive interventions produce high quitting rates[3] and there is a strong dose-response relation between session length of single contact and successful treatment outcomes.[1,3,7] However, despite intensive treatment programs, long-term abstinence (6 months or more) was under 50%.[15-21] Two studies reported high cessation rates (53.5% and 43.2%) at the end of the first year.[22,23] In both of those studies, the authors suggested that, multidisciplinary smoking cessation clinics with regular follow up and motivational training seemed to be

TABLE 3: The logistic regression analysis for predictors of quit smoking.

Variables	B	Odds Ratio	%95 CI	p value
Age	0.058	1.060	1.010-1.112	0.017
Cigarettes (Pack-years)	-0.047	0.954	0.921-0.987	0.007
Constant	-0.143	0.866		0.900

Omnibus test of model coefficients p< 0.001.

effective on high smoking cessation rates.[22,23] There is need to develop cost-effective and acceptable new intervention formats for achieving high success rates and preventing relapses. As we had evidences, which proved that the frequency, length and number of dual conversations increased the success rate, the use of different behavioral support programs might increase success rates and prevent relapses. Efficacy of face-to-face conversations in the intensive intervention programs was well-known.[3] A meta-analysis revealed that behavioral therapy programs in groups had similar results with face-to-face conversations.[3] Combining interventions can give promising results compared to a single intervention. On the other hand, programs using cognitive-behavioral techniques, can stay as psycho-educational technics. Psychodrama is an effective method to achieve the therapeutic goals of addiction treatment and it can be integrated with other therapies.[9,10] Conventional techniques coupled with psychodrama increase the efficacy of treatment. Thus, we suggest that psychodrama is a constituent method of cognitive-behavioral technique[10] ensuring a cognitive-behavioral approach. Effectiveness of the action method, the role-playing, eases the task of disputing irrational thinking, especially in comparison to a verbal-only method. This study, yielding significantly higher success rates by using an additional psychodrama program suggests that psychodrama method using different technics may be integrated in cessation programs.

In this prospective study, age seemed to be a factor of success to quit smoking. Older smokers were motivated to stop smoking. The finding for this predictor is consistent with results from previous studies.[24-27] A previous study showed that in a panel of 5104 randomised people aged 16-84 years, for both sexes, daily cigarette consumption, years spent to smoke and age were associated with success to quit.[28] In addition, some authors reported that, younger age was a risk factor for smoking following treatment.[29,30] Pack-years were also associated with success in quitting smoking in our study.Years spent with smoking and the level of daily cigarette consumption affected success in smoking cessation.

This study had several limitations. First, the sample size was relatively small. Second, we used psychodrama as an additional method to intensive intervention and it was not possible to evaluate the efficiency of this method as a single modality. This is the first study in which psychodrama was used in quitting smoking. We were unable to find articles that evaluated the effect of psychodrama and we did not have the chance to compare our results with others. Third, we did not use a biochemical marker to verify the quitting status. However, we think that this would not affect the difference between the results of the two groups and in surveys of this kind, very little deception is expected. In smoking cessation programs, successful abstinence may be determined by self-reporting and/or by biochemical test.[28] Self-reported measure was accepted and used in many other reports.[24,26,30-34] In a meta-analysis published by the Cochrane Group, 34 studies were identified including over 27.000 smokers and pooled data from 16 studies were analyzed. The main outcome mesaures were stopping smoking after at least six months of follow-up. Validation of all self-reported cessations by biochemical analyses was reported in only 26% of the studies.[35] Some trials analyzed the validity of self-reported smoking cessation and showed that self-reported data correlated with biochemical measures such as cotinine levels.[36-38]

The results of our study suggested that psy-

chodrama combined with the intensive intervention program could increase the succes rates of smoking cessation. We also thought that, if this treatment method was used for more than 8 weeks, it would be possible to see a long lasting effect on preventing relapses. A future study with a larger sample size and longer intervention time should be planned to test whether intensive clinic intervention plus psychodrama is more effective than standard intensive intervention in helping patients to quit smoking and to continue abstention.

REFERENCES

1. Laniado-Laborin R. Smoking cessation intervention: an evidence-based approach. Postgrad Med 2010;122(2):74-82.
2. Rose G, Colwell L. Randomised controlled trial of anti-smoking advice: final (20-year) results. J Epidemiol Community Health 1992; 46(1):75-7.
3. Fiore MC, Jaen CR, Baker TB, Bailey WC, Benowitz NL, Curry SJ, et al. Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline. Rockville MD: US Department of Health and Human Services. Public Health Service; 2008. p.11-34.
4. Burke MV, Ebbert JO, Hays JT. Treatment of tobacco dependence. Mayo Clin Proc 2008; 83(4):479-83.
5. Rodgers A, Corbett T, Bramley D, Riddell T, Wills M, Lin RB, et al. Do u smoke after txt? Results of a randomised trial of smoking cessation using mobile phone text messaging. Tob Control 2005;14(4):255-61.
6. Kennedy DT, Paulson DM, Eddy TD, Patel PC, Patkar AD, Holdford DA, et al. A smoking-cessation program consisting of extensive counseling, pharmacotherapy, and office spirometry: results of a pilot Project in a Veterans Administration Medical Center. Pharmacotherapy 2004;24(10): 1400-7.
7. Murthy P, Subodh BN. Current developments in behavioral interventions for tobacco cessation. Curr Opin Psychiatry 2010;23(2):151-6.
8. Killen JD, Fortmann SP, Schatzberg AF, Arredondo C, Murphy G, Hayward C, et al. Extended cognitive behavior therapy for cigarette smoking cessation. Addiction 2008;103(8): 1381-90.
9. Avrahami E. Cognitive-behavioral approach in psychodrama: discussion and example from addiction treatment. Arts Psychotherapy 2003;30(4): 209-16.
10. Blatner A, Blatner A. Foundations of psychodrama: history, theory and practice. 3rd ed. New York: Springer Pub. Co.; 1988. p.208.
11. Loughlin N. A trial of the use of psychodrama for women with alcohol problems. Nurs Pract 1992;5 (3):14-9.
12. Crawford RJ. Follow up of alcohol and other drug dependents treated with psychodrama. N Z Med J 1989;102(866):199.
13. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983;67 (6):361-70.
14. Fagerstrom KO, Heatherton TF, Kozlowski LT. Nicotine addiction and its assessment. Ear Nose Throat J 1990;69(11):763-5.
15. Hamzaçebi H, Özkaya Ş, Kırışoğlu T, Bilgin S. [Are the risk factors at restarted to smoking (relaps) can be detect? The results of smoking cessation clinic and the factors of affecting at tendency to relaps]. Turkiye Klinikleri Arch Lung 2009;10(1):1-6.
16. Solak ZA, Goksel T, Telli CG, Erdinç E. Success of a smoking cessation program among smoking relatives of patients with serious smoking-related pulmonary disorders. Eur Addict Res 2005;11(2): 57-61.
17. Silagy C, Mant D, Fowler G, Langester T. Nicotine replacement therapy for smoking cessation. Cochrane Database Syst Rev 2000;(2): CD000146. Review. Update in: Cochrane Database Syst Rev 2000;(3): CD000146.
18. Carlson LE, Taenzer P, Koopmans J, Bultz BD. Eight-year follow up of a community-based large group behavioral smoking cessation intervention. Addict Behav 2000;25(5): 725-41.
19. Poulsen PB, Dollerup J, Møller AM. Is a percentage a percentage? Systemic review of the effectiveness of Scandinavian behavioural modification smoking cessation programmes. Clin Respir J 2010;4(1):3-12.
20. Uyar M, Filiz A, Bayram N, Elbek O, Herken H, Topcu A, et al. A randomized trial of smoking cessation. Medication versus motivation. Saudi Med J 2007;28(6):922-6.
21. Önen ZP, Şen E, Eriş Gülbay B, Öztürk A, Akkoca Yıldız Ö, Acıcan T, et al. [Comparing the effectiveness of different treatment modalities on the smoking cessation rates]. Tüberküloz ve Toraks Dergisi 2010;58(4): 385-92.
22. Oztuna F, Can G, Ozlu T. Five-year outcomes for a smoking cessation clinic. Short communication. Respirology 2007;12(6):911-5.
23. Akkaya A, Ozturk O, Cobanoğlu H, Bircan HA, Simşek S, Sahin U. Evaluation of patients followed up in a cigarette cessation clinic. Respirology 2006;11(3):311-6.
24. Hymowitz N, Cummings KM, Hyland A, Lynn WR, Pechacek TF, Hartwell TD. Predictors of smoking cessation in a cohort of adult smokers followed for five years. Tob Control 1997; 6(Suppl 2):S57-S62.
25. Hymowitz N, Sexton M, Ockene J, Grandits G. For MRFIT Research Group. Baseline factors associated with smoking cessation and relapse. Prev Med 1991;20(5):590-601.
26. Raherison C, Marjary A, Valpromy B, Prevot S, Fossoux H, Taytard A. Evaluation of smoking cessation success in adults. Respir Med 2005;99 (10):1303-10.
27. Hyland A, Li Q, Bauer JE, Giovino GA, Steger C, Cummings KM. Predictors of cessation in a cohort of current and former smokers followed over 13 years. Nicotine Tob Res 2004;6(Suppl 3):S363-9.
28. Tillgren P, Haglund BJ, Lundberg M, Romelsjö A. The sociodemographic pattern of tobacco cessation in the 1980s: results from a panel study of living condition surveys in Sweden. J Epidemiol Community Health 1996;50(6):625-30.
29. Swan GE, Jack LM, Curry S, Chorost M, Javitz H, McAfee T, et al. Bupropion SR and counseling for smoking cessation in actual practice: predictors of outcome. Nicotine Tob Res 2003;5(6):911-21.
30. Gerber Y, Koren-Morag N, Myers V, Benyamini Y, Goldbourt U, Drory Y; Israel Study Group on First Acute Myocardial Infarction. Long-term predictors of smoking cessation in a cohort of myocardial infarction survivors: a longitudinal study. Eur J Cardiovasc Prev Rehabil 2011;18(3):533-41.
31. Renaud JM, Halpern MT. Clinical management of smoking cessation: patient factors affecting a reward-based approach. Patient Prefer Adherence 2010:4:441-50.
32. Hagimoto A, Nakamura M, Morita T, Masui S, Oshima A. Smoking cessation patterns and predictors of quitting smoking among the Japanese general population: a 1-year follow-up study. Addiction 2009;105(1):164-73.
33. MacKillop J, Kahler CW. Delayed reward discounting predicts treatment response for heavy drinkers receiving smoking cessation. Drug Alcohol Depend 2009;104(3):197-203.
34. Hyland A, Borland R, Li Q, Yong HH, McNeill A, Fong GT, et al. Individual-level predictors of cessation behaviours among participants in the International Tobacco Control (ITC) Four Country Survey. Tob Control 2006;15(Suppl 3):iii83-94.
35. Silagy C, Stead LF. Physician advice for smoking cessation. Cochrane Database Syst Rev 2001;(2): CD000165.
36. Schofield PE, Hill DJ. How accurate is in-patient smoking status data collected by hospital admissions staff? Aust N Z J Public Health 1999;23(6): 654-6.
37. Parazzini F, Davoli E, Rabaiotti M, Restelli S, Stramare L, Dindelli M, et al. Validity of self-reported smoking habits in pregnancy: a saliva cotinine analysis. Acta Obstet Gynecol Scand 1996;75(4): 352-4.
38. Pokorski TL, Chen WW, Bertholf RL. Use of urine cotinine to validate smoking self-reports in US Navy recruits. Addict Behav 1994;19(4): 451-4.