

*Tanaffos* (2002) 1(4), 61-67

©2002 NRITLD, National Research Institute of Tuberculosis and Lung Disease, Iran

## Effective Factors on Smoking Cessation among the Smokers in the First “Smoking Cessation Clinic” in Iran

Mohammad Reza Masjedi<sup>1</sup>, Hassan Azaripour Masooleh<sup>1</sup>, Mostafa Hosseini<sup>2</sup>, Gholam Reza Heydari<sup>1</sup>

<sup>1</sup>Department of Pulmonary Medicine, NRITLD, Shaheed Beheshti University of Medical Sciences and Health Services, <sup>2</sup>Department of Epidemiology and Biostatistic-Institute of public Health, Tehran University of Medical Sciences and Health Services, TEHRAN-IRAN

### ABSTRACT

**Background:** This study describes the status of 548 smokers who participated in the monthly quitting course of the first “Smoking Cessation Clinic” in Iran between the years 1998 through 2000.

**Materials and Methods:** All the target population completed the educational courses, which consisted of 7 sessions of 90 minutes in the groups of 6-15. Cigarette intake per/day among the smokers was: in 92 cases (16.9%) less than 10 cigarettes, in 262(48.1%) between 11-20 cigarettes, and in the remaining 191(35%) more than 20 cigarettes.

**Results:** The percentages of cessation in these three groups were 95.7%, 89.3%, and 83.8% respectively. This shows that the quitting rates among those who smoke less are significantly high ( $X^2$  for trend:  $p=0.003$ ).

Among them, 193(35.2%) attended all the visits regularly, 177(32.3%) were absent for one session and 178(32.5%) for 2-3 sessions. The quitting percentage in these groups were 94.8%, 93.8%, and 75.8% respectively, the relationship remains significantly associated with the lower absence rate ( $p=0.0001$ ).

There was no significant difference between the percentage of men and women who failed to complete the educational monthly course for any reasons ( $p=0.72$ ). Besides, no significant difference was observed between both genders who had succeeded to quit ( $p=0.12$ ).

**Conclusion:** The results confirm that the cessation rate in those who have smoked less cigarettes and attended the clinic courses more regularly were significantly more successful than the others. (*Tanaffos* 2002; 1(4): 61-67)

**Key Words:** Smoking cessation, Behavioral therapy, Nicotine replacement therapy.

### INTRODUCTION

Tobacco use is the leading cause of preventable death worldwide. At present, 4 million people die from tobacco each year, the half of these deaths usually occur in developing countries. If current trends continue, it is estimated that it will be

responsible for 10 million deaths by the year 2020, the majority of which (7 million) will occur in low-income countries (1). Tobacco epidemic and attributable mortality are expanding from high-income countries to affect people in low-income countries. Tobacco accounts for various types of diseases such as lung cancer (90%), other cancers

Correspondence to: Heydari Gh

Tel.: +98-21-2291201

E-mail address: ghrheydari@nritld.ac.ir

(40%), cardiac diseases (50%), and pulmonary disorders (75%)(2).

Since 1960, there have been various studies of smoking cessation and different methods of medication and behavioral therapies throughout the world. In the early 1990s, minimal intervention method was suggested by World Health Organization (WHO). In this connection, tobacco control comprehensive programs are of high importance, and establishment of tobacco cessation clinics is among the strategies to challenge for a smoke-free society. Smoking quitting bears fruitful effects for the smokers' health. The effects include:

- Increase in physical strength one-month after quitting
- Returning to normal lung capacity in 3 months
- Risk of developing stroke will be tantamount to non-smokers a year after cessation
- Decrease in the risk of developing cardiac diseases, 5 years after cessation (2,3).

## **MATERIALS AND METHODS**

Smoking cessation clinic, as a research project, was established for the first time in Iran by "National Research Institute of Tuberculosis and Lung Disease" (NRITLD). By approval of the Undersecretary of Research of Ministry of Health (MOH), the first clinic was put into operation with collaboration of Tehran municipality in 1998. Ever since, this clinic has been actively functioning by conduction many programs including health education, smoking cessation, counseling, and advising to quit. In the clinic, "Minimal Intervention Method" suggested by WHO is applied to help the smokers who want to quit. The quitting educational courses consist of seven, 90-minute sessions (2 sessions a week) run by general practitioners. The programs also consist of monthly classes for 4-5 groups consisting of 6-15 smokers. Smokers voluntarily refer to these centers, and the method for

registration is based on "First Come, First Service". In implementation of smoking cessation programs, the following are being employed: Providing education on various global statistics, smoking hazards, smoking-attributable diseases, and quitting methods.

Behavioral therapies administered to suppress craving for cigarette are as follows:

- Delay the cigarette until the craving passes
- Take a deep breath
- Drink lots of water
- Distract attention to different issues other than smoking
- Remind reasons about when he/she has chosen to stop smoking
- Rehearse adverse effects of tobacco
- Establish a reward system for not smoking

Group discussion is also done with respect to educational subjects in each session, and all the attendees are questioned about the given advice.

"Nicotine Replacement Therapy" (NRT), in form of "Nicorest" nicotine gums manufactured in Iran for the first time, are administered for all the patients, while their use for the subjects with high nicotine dependence, as shown in Fagerstrom Tolerance Test, are frequently advised.

Following the third session, smoking cessation starts, and smokers are generally encouraged to quit with regard to their craving for smoking and implementing the therapeutic techniques till the completion of the course.

At the end of each course, these ex-smokers will be under follow-up visit for one year, on the schedule of the first, third, sixth and twelfth months, and if need be, they can receive individual advice. Among the ex-smokers, some are randomly selected for confirmation of Nic Check Test.

Note should be taken for the fact that for each patient who attend the visits, a record including 10 forms (registration-personal data, for pre- and post-

tests, session report, the reasons for smoking, self-cognition, drug consumption, surveying around, and rounding up) is considered. These data are entered and analyzed in computer database.

## RESULTS

From 1998 to 2000, a total of 746 (587 males, 159 females) were registered in monthly educational course of "Smoking Cessation Clinic", in different groups of 80.

Among the target population, 198(25.6%) smokers (154males, 44 females) participated in less than four sessions and failed to complete the course for different reasons. They were considered as missing cases so that they omitted from the study. There was no significant difference between both genders who had not succeeded to complete the course ( $p>0.72$ ). Of 548, who had regularly attended the educational courses, 485(88.1%) successfully quit smoking. Over a period of 1 year, since the cessation, all former smokers should have follow-up contact either in person or by telephone, during which smoking status are reviewed.

Among those, 23.4% had a relapse into smoking a month after abstinence and the percentages in the 3<sup>rd</sup> and 6<sup>th</sup> months were 40.7% and 47.2%, respectively. One year after quitting, the rate of relapse was 52.4%.

The subjects were classified into 3 groups, according to their cigarette intake. Daily tobacco consumption in 92 cases (16.2%) was less than 10 cigarettes, in 262(48.1%) between 11 to 20, and in 191 (35%) more than 20 cigarettes (Table 1). Therefore, those who smoked 11-20 cigarettes a day were the most common group among the attendees. The proportion of successful quitting in the three groups was 95.7%, 89.3%, and 83.8%, respectively. There was a high significant relation between

cessation and the lower rate of cigarette consumption per day. In other words, the less they smoke, the more they are successful in quitting smoking ( $X^2$  for trend:  $p=0.003$ ).

**Table 1.** Quit results, at the end of the educational course, by daily cigarette consumption in the volunteers attending the first Smoking Cessation Clinic, 1998-2000

	Quit Rates		Total
	Success	Failure	
1-10 cigarettes	88	4	92
Per/day	95.7%	4.3%	100%
11-20 cigarettes	234	28	262
Per/day	89.3%	10.7%	100%
20 Cigarettes or more Per/day	160	31	191
	83.8%	16.2%	100%
	33.2%	49.2%	35%
Total	482	63	545
	88.4%	11.6%	100%
	100%	100%	100%

$X^2$  for trend = 8.93, df = 1;  $p = 0.003$

Over the 7-session educational and therapeutic courses, 193(35.2%) smoker attended all the visits, 177(32.3%) were absent for one session and 178(32.5%) for 2-3 sessions. The rate of cessation, upon completing the course, in the three groups was 94.8%, 93.8% and 75.8% respectively (Table 2). Data analysis revealed that a significant relation was observed between the number of lower absence and successful abstinence ( $p<0.00001$ ). Furthermore, 388(89.6%) of 433 male attendees and 97 (84.3%) of 115 female attendees succeeded to quit whereas no significant difference was found in the abstinence rate in both genders ( $p=0.12$ ).

**Table 2.** Quit results, at the end of the educational course, by the number of the volunteers' absent sessions from the first "Smoking Cessation Clinic", 1998-2000

	Quit Rates		Total
	Success	Failure	
With no absence	183	10	193
	94.8%	5.2%	100%
	37.8%	15.6%	35.2%
Absent for one session	166	11	177
	93.8%	6.2%	100%
	34.3%	17.2%	32.3%
Absent for 2-3 sessions	135	43	178
	75.8%	24.2%	100%
	27.9%	67.2%	32.5%
Total	484	64	548
	88.3%	11.7%	100%
	100%	100%	100%

$\chi^2 = 39.89$ ,  $df = 2$ ;  $p < 0.00001$

## DISCUSSION

"Smoking Cessation Clinic" as the first practical experience in Iran has been functioning based on "Minimal Intervention Method" suggested by World Health Organization (WHO). The clinic strives to help and guide the volunteer smokers who tend to stop smoking.

To quit effectively, a diverse array of methods including, general health advice, behavioral therapy, and "Nicotine Replacement Therapy" (NRT), if necessary, are generally implemented. Background of smoking cessation as a matter of high importance traces back to 1970s in the United States where different approaches were reviewed. It was formerly thought that medication therapy provided effective outcomes in achieving smoking cessation (7), but later on, education and behavioral therapy were taken more into account (8). Whereas, in 1990s, the use of NRT and behavioral strategies simultaneously were highly valued in cessation attempt (9,10).

There is the evidence that the likelihood of successful abstinence will be more desirable if all the collective approaches are administered (4). In this report, implementation of Minimal Intervention Method is adapted to social facilities available and cultural circumstances.

Having given the fact that tobacco epidemic and its death toll are on the move from developed countries to developing countries (3), it appears essential that carrying out smoking-cessation approaches in the line with comprehensive tobacco control policies are on top priority in the societies, while implementation of such a program has been unprecedented throughout the middle east regional countries.

The results demonstrated that only 25.6% of the participants (as missing cases) were omitted from the study through which no significant difference was observed among males and females (26.2% in males, 27.7% in females,  $p=0.72$ ). The finding of our study suggests that the allurements of the clinic courses and the way our colleagues dealt with both genders were equally the same, and it was the individuals themselves that failed to complete the course for any personal reasons.

It is worth mentioning that providing education services and tobacco abstinence treatment have been also equal for both males and females. This is the strong point of the project whose invaluable outcome might be hardly observed in the programs meant to render other services.

The relation between daily cigarette intake and the rate of successful quitting shows that the individuals who smoke fewer cigarettes are more likely successful in cessation attempt. This report provides the evidence that for people who smoke less (by 1-10 cigarettes), the chances to stop smoking are high. But when compared to our study, the proportion of smoking cessation in cases with high nicotine dependence (20 cigarette or more) is 83.8%, which is regarded as a strong point of this review. Hence,

public education on health consequences of smoking which lead to decrease in the cigarette consumption per day can significantly contribute to comprehensive tobacco control measures provided by such a center.

In comparison with the cessation results and the number of visits, the conclusion came out that during the educational courses the less absenteeism will bring about the more successful in quitting tobacco. Moreover, the significance of education, behavioral therapy, consultation, and nicotine replacement therapy in the period of the monthly course in each session will be noticeable.

It is worthy to note that, firstly, the obtained results of the study are the same as the parallel activities carried out in the United States (4), member states of European Union (5), and China (6). Secondly, the percentage of successful tobacco abstinence in the project, which has been initially conducted as practical experience in our country, is far more remarkable than the outcomes of the aforementioned studies.

This proves our successful project even with consideration of shortcomings such as being devoid of sufficient facilities and experiences existing in the country.

In sum, conduction of projected programs is worthwhile in producing higher abstinence rates, which occur among smokers. But, Having been given the relapse rates over the 1 year follow-up period, a pitfall of study, it is notable that the first 3 months since the cessation, especially the first month, is considered as a golden time for maintenance. Therefore, the need to further counseling is more felt for these groups. This shows that a close established rapport with such center increases the likelihood of remaining abstinence.

It is necessary to point out that the relapse percentage in this study revealed to be lower over 1 year period, compared to similar international ones,

this is regarded as one of the prominent aspects of the study (11,12).

The conclusions resulting from the present study together with the similar international experiences confirm that the implementation of such programs, even taking into consideration of the high level of financial and scientific support as well as its administrative problems, are of paramount importance in the promotion of public health.

## REFERENCES

1. Masironi Robert. A Strategy Proposal for the Development of National Tobacco or Health program. WHO Report, Geneva, 1990, Vol 4, P 2-10.
2. Fishman A. Pulmonary Diseases and Disorder Textbook of medicine. Smoking cessation. Mc Grow-Hill 1998, Volume 2, Chapter 109; P: 1719-25.
3. SLAMA KAREN. Tobacco Control and Prevention. A Guide for Low Income Countries, IUATLD, Paris, 1998, P: 12-70.
4. Cromwell Jerry, Bartosch William J, Bartosch, Michael C, Fiore Victor Hasselblad, Timothy Baker. Cost-effectiveness of the Clinical Practice Recommendation in the AHCRP Guidline for Smoking Cessation. *JAMA* 1997; 278: 1759-66.
5. Monso E. Sociodemographic predictors of success in smoking intervention, tobacco control. *June* 2001; 10 N2: 165-69.
6. Young G. Smoking cessation in china, tobacco control. *June* 2001; 10, N2: 170-4.
7. Centers for Disease Control and Prevention. Cigarette smoking-attributable mortality and years of potential life lost: United States, 1990. *MMWR Morbidity Mortality Weekly Rep* 1993; 42: 645-9.
8. Centers for Disease Control and Prevention. Physician and other health care professional counseling of smokers to quit: United States, 1991. *MMWR Morbidity Mortality Weekly Rep* 1993; 43: 925-30.

9. Fiscella K, Franks P. Cost-effectiveness of the transdermal nicotine patch as an adjunct to physicians' smoking cessation counseling. *JAMA* 1996; 275: 1247-51.
10. The Smoking Cessation Clinical Practice Guideline Panel and Staff. The Agency for Health Care Policy and Research smoking cessation clinical practice guideline. *JAMA* 1996; 275: 1270-80.
11. Physicians can make a difference with smokers: evidence-based clinical approaches. Presentation given during the Symposium on Smoking Cessation at the 29<sup>th</sup> World Conference of the IUATLD/UICTMR and Global Congress on Lung Health, **Bangkok, Thailand, 23-26 November 1998. R.L. Richmond.**
12. Richmond R, Webster I. Evaluation of general practitioners' use of a smoking intervention programme. *Int J Epidemiol* 1985;14(3):369-401.