

Efficacy of Telephone Quit-Line for Smokers in Iran: 12 Months Follow Up Results

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ABSTRACT

Background: Smoking cessation is an effective intervention for cancer prevention. For some reasons many smokers cannot attend quit programs and they prefer to have a consultation over the phone. In this study we share our experience regarding setting up a quit-line for smoking cessation for the first time in Iran.

Materials and Methods: Two general practitioners were trained to give consultation over the phone via quit line in Tehran. The quit program consisted of 4 sessions with 1 week interval. Our telephone counseling was both reactive and proactive from 8 AM till 5 PM during the years 2005 – 2008. In reactive counseling, the smoker initiates the call and speaks with a counselor about his/her current concerns. In proactive counseling, the counselor calls the smoker and provides counseling in a systematic manner. Smoking status was determined based on smokers' self-report and regular follow-ups were conducted after quitting. Some cases were randomly selected for CO respiratory test in order to confirm their abstinence.

Results: A total of 480 cases entered the cessation program out of which, 80% were males. The mean age was 38.5±7.9 years, 72.7% of participants were married, 75.2% of subjects were educated and 51.3% of cases had high nicotine dependence. A total of 332 cases received a brief advice on quitting, 148 people continued their active participation to complete the course and 122 cases (82.4%) quit smoking. The sustained abstinence rate after 1, 3, 6 and 12 months was 59 %, 41 %, 31% and 18%; respectively.

Conclusion: This method is an appropriate and accessible method which can be suggested to smokers during smoking cessation counseling. (*Tanaffos*2011; 10(3): 42-48)

Key words: Quit-line, Smoking, Cessation, Iran

INTRODUCTION

Global tobacco epidemic threatens the lives of one billion men, women and children in the current

century. In fact, tobacco use can kill in so many ways and it is a risk factor for six of the eight leading causes of death in the world (1).

Tobacco epidemic claims lives of 5.4 million people per year through lung cancer, heart disease and other illnesses. This rate will increase to more than 8 million a year by 2030 (2).

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Prevalence of tobacco consumption is growing fast in low-income countries due to the steady population growth coupled with tobacco industry advertisements that ensure millions of people become fatally addicted each year (1). More than 80% of the world's tobacco-related deaths will occur in low and middle-income countries by 2030 (3).

Cigarette smoking has also been a serious public health concern in Iran. The prevalence of adult cigarette smokers in Iran is about 14.2% which includes 24.1% of men and 4.3% of women. However, based on some studies' findings it seems that these rates should be higher. There are about ten million smokers in Iran and rate of smoking related deaths is about 70,000 annually (4).

People who stop smoking greatly reduce their risk of dying prematurely. Benefits are greater for people who stop at earlier ages, but cessation is beneficial at all ages (5-8).

Smoking cessation services can make a difference in reducing the death toll and burden of disease caused by tobacco use. The addictive nature of tobacco products alone makes cessation difficult for those who want to quit but it is not impossible. With the help of smoking cessation treatments proven to positively influence success rates, tobacco users can succeed in quitting. Interactive telephone counseling is among effective treatments that can double and even triple the rate of successful quitting in those who try to quit without assistance. Tobacco cessation quit-lines have been operational in Europe and North America since the 1980's. Quit-line is a service that offers telephone support for people who want to quit tobacco consumption. Support is offered through providing information and counseling over the phone. Quit-lines offer additional services such as medications, online cessation information and programs, and referral to community-based cessation programs as well (7,8).

Quit-lines or smokers' help-lines are identified as a valuable component of any large scale tobacco control program. They provide relevant, accessible, flexible, and affordable methods for quitting smoking. Reactive telephone services, such as help-lines, have been appraised as effective cessation aids and are utilized as an adjuvant to pharmacotherapy and an important referral point for physicians and other health professionals. The response to help-lines depends directly to advertising their availability to smokers. Helpline services are being increasingly used to provide a first line source of accessible assistance for quitting within the context of mass media anti-smoking campaigns. The aim of these services is to provide assistance to as many smokers as possible. The first objective must be to provide minimal forms of assistance, rather than a more intensive counseling. This means that the service must be organized in a way that it permits prospective callers to access the service when they wish to, even during periods of intensive media advertising, when call volume may be very high (9).

Quit lines are inexpensive to operate, easily accessible, confidential and can be staffed for long hours; many tobacco users may be unable or unwilling to call during business hours (1). Additionally, quit lines can reach individuals in remote places and can be tailored to specific population groups. For example, the United Kingdom's Asian Quit Line receives 20,000 calls a year and reaches 10% of all South Asian tobacco users in that country (10). Although traditional quit lines only answer incoming calls, they can show significant results as well (11). Quit lines linked to counseling services are even more effective in helping people overcome nicotine addiction.

It has been years since the establishment of the first smoking cessation clinic in Iran and now we know that for some reasons many smokers cannot

attend quit programs and they may prefer to have a consultation over the phone. In this study, we share our experiences regarding setting up a quit-line for smoking cessation for the first time in Iran.

MATERIALS AND METHODS

This was a cohort study conducted during 2005-2008 for the first time in Iran in the Tobacco Prevention and Control Research Center, Tehran, Iran.

The questionnaires included questions regarding the demographic data, record of previous quit attempts, substance abuse, nicotine dependence and reasons of smoking.

Our telephone counseling was both reactive and proactive. In reactive counseling, the smoker initiates the call and speaks with a counselor about his/her current concerns. In proactive counseling, the counselor calls the smoker and provides counseling in a systematic manner, with scheduled sessions similar to traditional cessation clinics.

All the callers were either interested in quitting or had some questions in this realm. People were informed of this service via those who knew smoking cessation clinics or by listening to the radio interviews. If the smoker caller was ready to quit, he/she would enter the research project. During the first session, the caller would respond to the questionnaire. At first the counselor would describe the stages of smoking cessation through quit-line, give some advices and then the time of next call would be scheduled. These advices include writing down the reasons for quitting, changing the number and brand of cigarettes smoked, finding a new form of smoking and changing the place of smoking. During the first call, the caller may just want to get some information about "smoking" and or "some other smoking cessation methods". In such cases the callers were not registered in the study and the

counselor just answered their questions. If the smoker wanted to start the program, the next session would be scheduled upon his/her agreement. The nicotine dependence rate of smokers was determined by the Fagerstrom test during the first session. (1)

In the second session, after the caller self-reported the fulfillment of the previous advices, the counselor would give some cognitive-behavioral advices. These advices included delaying techniques, deep breathing, drinking plenty of water and thought deviation. The caller had to use one of these techniques. Finally, the time of the next call would be scheduled by the counselor and he/she informs the smoker that the third session will be the quit day. However, if the caller is not ready to quit in the third session, the quit date can be postponed as the caller wishes.

In the third session which is the quit date, the caller is asked to completely stop smoking and use nicotine replacement therapy (NRT). Therefore, whenever the caller has a strong craving for smoking they should follow the cognitive-behavioral methods that have learned before and if the craving still exists they should use NRT if the consumption of these drugs is not contraindicated for them.

The correct consumption of NRTs or non-nicotinic medicines is taught to the caller and the correct dosage and type of NRT are determined. Besides, some information about withdrawal syndromes is given. Finally, the fourth session is scheduled.

In the fourth session, if the caller has used NRT and has not smoked, he/she is asked about probable withdrawal symptoms and if there is any symptom the counselor would teach them how to manage it. The side effects of NRTs are also described to the caller and some recommendations are also given on how to decrease smoking craving. The next sessions are follow-ups which would be on the first, third,

sixth and twelfth month after the quit date. However, the caller can call on specific days if he/she has any problem in smoking cessation process.

If the caller did not quit smoking in the fourth session, the consultation would be continued if he/she wishes to and another quit date would be scheduled. If the caller did not quit in the next session, he/she would be excluded from the study. In this case the caller is recommended to participate in group courses or to visit a doctor.

If the caller quitted in the fourth session but during the next sessions the caller said that he/she smoked just once we assume that the caller has had a relapse and needs some advice to continue the abstinence. If the caller smoked daily it means that he/she had a relapse and another quit date would be set. Necessary advices would be given as well. The success of caller would be shown in the next sessions if he/she would sustain the abstinence.

At the end of sessions, all successful quitters were asked to present to our center for measuring their respiratory carbon-monoxide level. It is a way for confirming the abstinence. We checked their respiratory CO by "SMOKE CHECK" made by "Micro Medical Limited" in England. This set has 4 different ranges which show respiratory CO level from 0-6, 7-10, 11-20 and +20. The level of respiratory CO in smokers is usually 11 and above. The acceptable range for confirming a successful quit in our study was within the range of 0-6 (12).

In this study "quit" means that the caller did not smoke even one puff after his/her quit date and the minimum time for quit is considered to be 24 hours (13).

Such study has never been conducted in Iran. Our estimated quit rate was 50%, confidence interval was 95%. By using sample size estimation puzzle and dichotomous variables, sample size was calculated to be 141 people. We also considered 30% anticipation of reduction because of problems such as hardship of calling us due to the presence of just one quit-line, long waiting time and consequent disappointment

and frustration. Therefore, we decided on the final sample size to be 222 people. Chi square test and SPSS software were used for data analysis. P-value<0.05 was considered significant.

RESULTS

In this study, 1000 cases made the call of which 520 received some brief information regarding their smoking status and how to quit. A total of 480 cases entered our cessation program.

There were 384 (80%) males. The mean age was 38.5. 349 yrs.; 72.2% were married and 183 (38%) were self-employed, 361 (75.2%) were educated. In terms of smoking status, 239 of them (49.8%) smoked 11-20 cigarettes a day and 246 (51.3%) were shown to be highly dependent to nicotine (score 8-10) in Fagerstrom test. A total of 384 (72.5%) had more than one quit attempts.

The duration of first calls are shown in the Table 1. The mean duration was 13.2 ± 5.3 minutes. For second to fifth calls the mean duration was 7.5 ± 3.1 minutes. We had a total of 6,240 minutes for the first calls and 13,110 minutes for all calls.

Table 1. The duration of first calls to quit line.

| Minute | Number | Percent |
|--------------|--------|---------|
| Less than 10 | 102 | 21.3 |
| 11-20 | 143 | 29.3 |
| 21-30 | 112 | 23.4 |
| 31-40 | 62 | 13 |
| 41-50 | 37 | 7.7 |
| More than 50 | 22 | 4.6 |
| Missed | 2 | - |

A total of 332 cases received a brief advice to quit in less than 3 calls without continuing to complete their course and 148 people called at least 4 times before quitting and 1 time after quitting.

Table 2 shows the correlation between quitting and some important characteristics.

The sustained abstinence rate after 1, 3, 6 and 12 months was 72 (59%), 50 (41%), 38 (31%) and 22 (18%) respectively.

Table 2. Factors associated with successful quitting.

| Characteristics | Non-quitter Row % (n) | Quitter Row % (n) | p-value for X ² tests |
|--|--------------------------|----------------------|-------------------------------------|
| Demographic data: | | | |
| <i>Gender</i> | | | |
| Male | 14.0(16) | 86.0(98) | 0.039 |
| Female | 29.4(10) | 70.6(24) | |
| <i>Marital status</i> | | | |
| Single | 10(3) | 90(27) | 0.116 |
| Married | 17.8(19) | 82.2(88) | |
| Widowed | 0(0) | 100(2) | |
| Divorced and Separated | 44.4(4) | 55.6(5) | |
| <i>Occupational status</i> | | | |
| Retired | 15.4(2) | 84.6(11) | 0.299 |
| Students | 44.4(4) | 55.6(5) | |
| Housewife | 25(4) | 75(12) | |
| Employee | 14.8(8) | 85.2(46) | |
| Self employed | 14.3(7) | 85.7(42) | |
| Unemployed | 14.3 (1) | 85.7(6) | |
| <i>Age</i> | | | |
| 15-24 | 6.3(1) | 93.8(15) | 0.750 |
| 25-34 | 22.7(10) | 77.3(34) | |
| 35-44 | 20.5(8) | 79.5(31) | |
| 45-54 | 16.1(5) | 83.9(26) | |
| 55-64 | 12.5(2) | 87.5(14) | |
| 65+ | 0(0) | 100(2) | |
| <i>Educational level</i> | | | |
| Below high school diploma | 22.2(6) | 77.8(21) | 0.509 |
| High school diploma | 13(7) | 87(47) | |
| Higher than high school diploma | 19.4(13) | 80.6(54) | |
| Smoking status: | | | |
| <i>Daily Cigarette Consumption</i> | | | |
| 1-10 | 8(4) | 92(46) | 0.079 |
| 11-20 | 22.4(17) | 77.6(59) | |
| 21+ | 22.7(5) | 77.3(17) | |
| <i>Nicotine dependence level (Fagerström Test)</i> | | | |
| Mild | 8.3(3) | 91.7(33) | 0.189 |
| Moderate | 17.1(7) | 82.9(34) | |
| Severe | 22.5(16) | 77.5(55) | |
| <i>Age of smoking initiation</i> | | | |
| 19 and below | 40(4) | 60(6) | 0.750 |
| Above 19 | 15.9(22) | 84.1(116) | |
| Quitting History: | | | |
| <i>No previous quit attempt(s)</i> | | | |
| None or one | 15(6) | 85(34) | 0.303 |
| More than one | 18.5(20) | 81.5(88) | |

DISCUSSION

This study was based on self report interviews over the phone. This type of interview is acceptable

and reliable only when there is no chance for a face to face interview. (14)

This was the first quit-line in Iran. Callers were mostly educated married males who were self-employed and had a history of quit attempt. Number of cigarettes smoked was usually 10 to 20 per day.

Some of our findings in this study were comparable with those of others in different parts of the world where quit-line services are offered, such as California (15), Massachusetts (16), Scotland (17), and Hong Kong (18). In these studies sustained abstinence rate was within 20% - 31% and was greater in males. Our other findings like gender, marital status and the history of previous quit attempts however, were not in accord with those of other studies.

This study failed to show a significant association between smokers' characteristics and quitting except for gender. Since this was our first experience in this regard in Iran, the author had no hypothesis explaining the correlation between smokers' gender and their subsequent quit. However, the reason might be related to the sympathy between our male callers and female consultant.(19-22) It can also be due to our small sample size and should be evaluated in future studies.

Self employed smokers comprised the highest percentage of callers (38.1%) which can be due to the fact that they have more free time. Also, 31.9% of callers were employees and it shows that employees prefer this type of smoking cessation because they can participate in it even when they are at work.

Contrary to many studies (23-25), in our study no association was found between nicotine dependence (Fagerstrom test) and level of success in quitting smoking. This may be due to the insufficient number of callers. (P-value: 0.189)

We were not able to provide services to all quit-line callers, because many of them called during non-operational hours out of which only a small proportion might have called back again during operational hours. This is probable that a substantial

proportion of the public seek smoking cessation services during early morning or late night hours or on holydays. Quit-line should revise its operational hours in the future to better suit the needs of the callers.

In our study, the quit rate after 6 months was 60.3% which was a reasonable rate when compared to others' findings. (11, 26)

In this study, we just studied callers who wanted to quit smoking but as mentioned before, our quit-line offers other types of services as well; such as providing information about methods and products that help smokers quit, informing smokers' family and friends about the methods of quitting, hazards of smoking, symptoms after quitting and in some cases smoking prevention. Therefore, we helped a wide range of callers in terms of tobacco smoking, its related hazards and treatment.

Our findings indicate that the quit-line, which have been effective in the US, UK and Australia (11,17,18,27-29), is also effective for Iranian smokers. However, our results cannot be compared with those of others in terms of quit rates because of the differences in the definitions of quit rate, the target populations, and follow up periods.

This study showed the effectiveness of telephone quit-line service which seems to be both accessible and acceptable in Iran. This service can be launched to provide a smoking cessation program in other developing countries.

Limitations:

Our study limitations included using just one phone line for counseling and small number of counselors. Thus, the line was busy most of the time and lots of callers who got a busy signal became disappointed and hung up. Another problem was not answering the phone calls during the non operational hours. The huge number of phone calls showed that people needed a 24-hour quit-line assistance.

In this study, we just evaluated the callers who wanted to quit smoking but similar to quit-lines in developed countries, as mentioned before, our quit-

line offered other types of services, such as giving information about quitting products and methods, providing information for family and friends of smokers regarding the methods of quitting, hazards of smoking and the symptoms after quitting and in some cases prevention of smoking.

The strength point of this study was investigating a cheap, easy to access, and acceptable quit line for quitting smoking. Another strength point was the counseling training course held for general physicians (GPs) who wanted to work as a counselor in the help line.

CONCLUSION

In conclusion, the quit-line appears to be a useful and acceptable smoking cessation service for smokers in Tehran, which suggests the establishment of more quit-lines in other cities.

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