

Effective time of medication in smoking cessation program merging with drug abuse treatment center in welfare organization, Iran 2017

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OBJECTIVES: Providing smoking cessation services is of special importance to the tobacco control programs. To date, several smoking cessation techniques such as group counseling and use of nicotine gums have been employed nationally. However, the efficacy of nicotine patches has not been evaluated and no specific duration is specified for their use.

METHODS: This was a cross sectional study of merging quit smoking intervention with behavioral therapy and medication in 24 drug abuse treatment centers at welfare organization in 6 districts of Iran in 2017. Subjects were visited by a physician for 3 times and were followed up by

phone and through regular visits to the clinic at 3, 6 and 12 months post-intervention.

RESULTS: A total of 227 smokers including 133 males (58.4%) with a mean age of 43.1 ± 12.9 years were enrolled among which 116 (51.1%), 89 (43.6%) and 34 (20.6%) smokers quit smoking after 2, 6 and 12 months, respectively. Quit rate was significantly higher among those who used medication for more than 6 weeks and this rate was not correlated with age, sex, educational level or nicotine dependence. Also, 189 subjects (83.2%) were completely satisfied with the treatment protocol.

CONCLUSION: Long-term smoking cessation medication increases the quitting success rate.

Key Words: *Smoking; Quit; Drug abuse*

In the current year, tobacco consumption has resulted in death of more than 5 million people and the rate of morbidity and mortality is expected to exceed 8 million annually by the year 2030 (1).

More than a billion people worldwide are addicted to tobacco products. Many of these people would like to quit but unfortunately only a small number of them can benefit from assistance in this respect. Thus, authorities in different countries are responsible for providing low-cost and cost-effective interventions and quit programs to help smokers stop smoking (2).

As for any kind of addictive substance, quitting smoking without any outside assistance can be difficult for the majority of smokers. It would be preferred if they overcome their nicotine dependence with the help of their quitting counselor (3).

Treatment of nicotine dependence is among the main responsibilities of health care systems worldwide. Several techniques such as a simple medical consultation, pharmaceutical therapy and over the phone counseling via quit-line have been suggested for this purpose. Repeated consultations during medical visits emphasize the necessity of quitting smoking (4,5). Over the past two decades the demographics of drug abuse in the Islamic Republic of Iran have been similarly changing. Whereas the average age of addiction used to fall between 25 and 29 years, that figure is now between 10 and 19 years (6). Today, the average drug abuser is younger and less financially stable. Couple this trend with an over all younger population in the Islamic Republic of Iran and the number of drug abusers is burgeoning. The behavioral connections between smoking and drug use become important as the mean age of introduction for tobacco and narcotics converge. The intersection of these "dual addictions" is particularly problematic for Iranian health officials. Tobacco usage is very common among those addicted to drugs and especially among opiate abusers, who constitute the majority of the Islamic Republic of Iran's addict population. Among this group 60% to 90% are smokers (7,8). People from all over the country should have the opportunity to use quit-lines. Expert counselors should be available to assist smokers in quitting via the quit-line. These services are cheap, easily accessible, and confidential and can be accessed at any time since many smokers are not free or interested to call during business hours (9,10).

Aside from medical consultations and quit-lines, an efficient nicotine

dependence treatment may include medication in the form of skin patches, lozenges, nicotine gums or nasal inhaler. Nicotine replacement drugs can easily be purchased over the counter and do not require a prescription. Medication decreases the signs and symptoms of nicotine withdrawal syndrome and somehow replaces the nicotine received from smoking (11,12).

Due to had many study on different topic of quit smoking in Iran (13-19) the aim of this study was to present efficacy of merging smoking cessation with drug abuse treatment nationally for the first time in Iran.

METHODS

This was a cross-sectional study was done from 2015 to 2016. After having a memorandum between Tobacco Prevention and Control Research Center and State Welfare Organization in 2015 it was appointed in the first phase to choose seven provinces of Tehran, Eastern Azerbaijan, Razavi Khorasan, Isfahan, Fars and Mazandaran for necessary trainings and starting to give smoking cessation services in substance abuse treatment centers. From each province four centers were chosen including two outpatient centers and two inpatient centers. Besides, 24 persons including both physicians and health care workers were chosen to take the related training courses and treatment guidelines. These centers have provided the services since the beginning of June 2016 and all the new clients of substance abuse treatment were entered the survey. Clients with substance abuse treatment were entered the survey. Clients with severe psychotic disorders and having no family and specific address were omitted. All services were given free of charge including visit, assessment of tobacco smoking and its history, behavioral consultation and guidance to use nicotinic and non-nicotinic medications. Of course, the State Welfare Organization dedicated some financial aids to these centers.

RESULTS

A total of 227 subjects participated in this study out of which 133 (58.4%) were males. The mean age of subjects was 43.1 ± 12.9 years (range 18-86 yrs.). In terms of level of education, 96 subjects (42%) had a bachelors or higher degree. The average smoking experience was 21.6 ± 11 years (range 2 to 60 years). They gained a mean score of 5.5 ± 2.8 (range 0 to 10) in Fagerstrom nicotine dependence test and a mean score of 27.5 ± 12.8 (range 6-94) in exhaled CO test. Successful quit rate was 51.1% (116 individuals) at

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TABLE 1

Comparison of the independent variables between the 3 groups based on the duration of nicotine patch therapy, Tehran 2012

Group		1		2		3		Sig
Duration of medication		Up to 3 weeks		3 to 6 weeks		More than 6 weeks		
		Number	Percentage	Number	Percentage	Number	Percentage	
Gender	Male	41	30.8	41	30.8	51	38.3	0.08*
	Female	35	37.2	36	38.3	23	24.5	
Age	Mean	44.1		41.7		43.6		0.4*
Level of education	Below high school diploma	16	25	23	35.9	25	39.1	0.17*
	High school diploma	28	41.8	24	35.8	15	22.4	
	Bachelors or higher	32	33.3	30	31.2	34	35.4	
Years of Smoking	Mean	21.9		21.4		21.5		0.94*
Years of drug abuse	Mean	17.1		16.8		17.3		0.91*
Nicotine dependence	Mean	5.7		5		5.8		0.16*

*Chi square test; +Tukey's test

TABLE 2

Frequency of quitting at 2, 6 and 12 months among smokers presenting to the smoking cessation clinic based on the duration of medication

Variables	Second month						Total	
	Group 1		Group 2		Group 3			
	Up to 3 weeks		3 to 6 weeks		More than 6 weeks		Number	Percentage
Quit	17	14.7	51	44	48	41.8	116	100
Consumption	59	53.2	26	23.4	26	23.7	111	100
Total	76	33.5	77	33.9	74	32.6	227	100
	Sixth month							
Quit	12	13.5	35	39.3	42	47.2	89	100
Consumption	56	48.7	34	29.6	25	21.7	115	100
Total	68	33.3	69	33.8	67	32.8	204	100
	Twelfth month							
Quit	2	5.9	12	35.3	20	58.8	34	100
Consumption	53	40.5	44	33.6	34	26	131	100
Total	55	33.3	56	33.9	54	32.7	165	100

P<0.000

2 months, 43.6% (89 individuals) at 6 months and 20.6% (34 subjects) at 12 months.

Subjects were divided into 3 groups based on the duration of medication. Table 1 shows the data for independent variables and the significant differences between the 3 groups in these variables.

Table 2 shows the quit outcome at 6 and 12-month follow ups in the 3 groups. In group 3 quit rate at 2, 6 and 12 months was 64.8% (48 from 74 subjects) 62.6% (42 from 67 subjects) 37% (20 from 54 subjects) respectively higher than two other group significantly. (P<0.000)

Chi square test failed to find a statistically significant difference in frequency of quitting between males and females and subjects of different educational levels. Independent t-test did not show a significant correlation between frequency of quitting and age. In questioning, 189 of the subjects (83.2%) gave a score greater than 7 (from a 0 to 10 scale) and no significant difference was detected based on this score using the ANOVA and Tukey's test between the 3 groups or the chi square test between subjects in terms of quitting.

DISCUSSION

Our experience herein was merging smoking cessation course with the State Welfare's program which was happening for the first time across the nation. This study showed that patients and their families were satisfied of simultaneous cessation of smoking and opium and also it caused some reduction in substance abuse and relapse.

Nicotine dependence is a clear sign of addiction to smoking and Medication is a standard pharmaceutical treatment for smoking cessation. This treatment aims at replacing the nicotine received through smoking and thus,

decreases the withdrawal syndrome signs and symptoms during abstinence (20-23). A meta-analysis showed that NRT helps smokers quit smoking and demonstrated a 7% increase in quit rate after 6 to 12 months as the result of 3 months use of NRT. By adding behavioral support programs, this rate further increased by 7% to 8%. The prescribed dosage of NRT depends on the rate of nicotine dependence. Usually, its consumption is allowed only for a limited period of time. However, in case of continuation of nicotine dependence, its usage can be extended by 3 months or longer (24).

This study revealed that about half the subjects were able to successfully quit smoking during the 2nd month of treatment but this rate reduced to 20% one year later. Relapse after quitting is a common occurrence which usually occurs during the first year of abstinence as mentioned in many studies (25). Relapse mostly occurs within the first 6 months and specifically in the first month after quitting (26). However, in the present study, a significant difference in this respect was observed in the second 6 months after quitting. This finding can be further evaluated in future studies.

CONCLUSION

An important finding of the present study was the high quit success rate and continued abstinence in smokers who used more nicotine patches. This finding has also been mentioned by Tonnessen et al. (27) and should be taken into consideration by the authorities in tobacco control programs. Smokers who use NRT should be advised to use nicotine patches for longer periods of time. This issue was also mentioned in many other studies like the one by Shiffman et al. (28) who used other forms of NRTs. NRT for 6 to 8 weeks or up to 12 weeks in some cases has been specifically recommended.

Many documents in Iran show that tobacco control program are acceptable and many smoking cessation methods are available (13-19) but this experience

about merging smoking cessation with drug abuse treatment is newly coming and may have effective outcomes in future.

Another important issue in the present study was the high acceptability rate of this treatment modality among participants since more than 80% of them were satisfied with the treatment method and this issue can be a subject of discussion for future studies. Long-term medication improves the success rate of quitting.

WHAT DOSE PAPER ADDS?

Medication along with brief advice from a physician on quitting is usually accepted by the smokers. Longer use of medication results in better quit outcomes. The free of charge or low cost of medications is important for patients.

CONTRIBUTIONS

GH had the original idea, designed the study and outlined the first draft of the manuscript. MR, MA and BA contributed to revision of the article for important intellectual content, English editing and final approval.

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