

Prevalence of Cigarette Smoking in Tehran: A household study

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Objective: Cigarette smoking is a highly addictive behavior and nicotine dependence is a well known model for drug dependence. It also acts as a gateway drug for the use of other illicit substances. In 1999, Iran Ministry of health and the national research center carried out a study which revealed that 11.9% of Iranian population use cigarette.

Methods: The present study is a cross-sectional household survey which was carried out in 2004. The target population of this study consisted of residents (age>15) of the sixth district of the municipality of Tehran. The sample was selected through multistage stratification and systematic randomization (n= 2705). Data was gathered using face-to-face interviews.

Results: Our study showed that 540 (19.9%) subjects reported regular use of cigarette sometimes in their life. Three hundred and eighty one (14.1%) reported that they were current smokers. The Prevalence of smoking and the mean number of cigarette smoked daily were lower in women compared to men. About seventy four percent of the smokers reported that they smoked their first cigarette before the age of 25. Only 7.8% reported that they started smoking after the age of 35.

Conclusion: The self-reported lifelong prevalence and the prevalence of current smoking are much lower in Iran compared to many other Middle East countries. Moreover, according to the findings of this study, the number of attempts to quit smoking in Iran is lower than the reported rate in other countries of the region.

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Introduction

Cigarette smoking is a highly addictive behavior and nicotine dependence is a well known model for drug dependence where tobacco smoking fulfills the physiological, behavioral, and social characteristics of a dependence syndrome. It also acts as a gateway drug for other drugs of abuse (1,2).

Smoking is now well established as a recognized cause of cancer, lung diseases, coronary heart disease, and stroke; it is considered the single most important avoidable cause of premature morbidity and mortality in the world (3-6). Furthermore, several studies have also reported positive associations between smoking and psychiatric disorders (7-11) and poorer quality of life (12).

In 1999, Iran Ministry of health carried out a study with cooperation of the national research center which revealed that 11.9% of Iranian population smoke cigarette (13). The percentage of people with daily smoking of less than 10 cigarettes, between 10 to 20 and more than 20 was 4.6%, 2.9% and 4.4% respectively. Interestingly only 1.03% of smokers were female. The Regional Office for the Eastern Mediterranean of WHO reports that the prevalence of regular smoking in Iran is 12%. This figure is less than the prevalence of smoking in most of the countries in the region. For example, the prevalence of smoking in Jordan, Pakistan, Qatar and Saudi Arabia are 30%, 23%, 25% and 20% respectively (14). The lifetime prevalence of smoking in America is estimated around 50%. Currently about 25% of Americans smoke, 25% are former smokers and 50% have never smoked. The onset of daily smoking occurred almost entirely before the age of 30, with a higher rate between 15 and 20 years of age. Females had a lower risk of daily smoking than males, and nonwhites had a lower risk than whites (15).

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In recent years, there have been changes in the prevalence of cigarette smoking and nicotine dependence in the world; the prevalence of smoking has dropped in the developed countries and at the same time, it has gone up in some developing countries like China (16,17). The drop in the prevalence of smoking in developed countries is associated with an increased chance of nicotine dependency syndrome (18-21).

According to the existing data, the epidemiology of smoking in Iran is neither like developing countries, nor like developed ones. This house-hold survey was designed to ascertain the prevalence of cigarette smoking more precisely in Tehran-Iran.

Materials and Methods

The study is a cross-sectional household survey which was carried out in 2004. The target population consisted of residents of the sixth district of the municipality of Tehran over the age of 15. According to the data available from the center of statistics in Iran there are 216,921 people (>15 year old) living in 59,112 families in this region. This area was selected by the "Tehran Institute of Psychiatry" and "Mental Health Research Centre" for comprehensive population health surveys.

The sample was selected through multistage stratification and systematic randomization. All household members (>15 year of age) from every 10th house were selected (n=2705). Data was gathered using face-to-face interviews by psychologists who had participated in two training sessions (each session lasted 4 hours). All the households in the selected houses were interviewed. If one of the family members was not available, another interview time used to be arranged to be able to interview all family members. If nobody was available at a certain address in two different times, a consenting next-door neighbor was interviewed to replace the missing family.

Information on demographic characteristics, detail of cigarette use and mental health status of the participants were collected. We used

descriptive statistics and t test to analyze the data by SPSS.

Results

Out of 2,705 who took part in the study, 43.5% were male and 56.5% female. Thirty two point three percent of subjects were single and 61.6 married. The mean age of the subjects was 40.2 (\pm 17.4) (Table 1).

Table 1. The age distribution of the subjects

Age	Number	Percentage	Cumulative percentage
<20	412	15.2	15.2
21-30	540	20.1	35.3
31-40	489	18.2	53.5
41-50	514	19.1	72.6
51-60	351	13	85.6
61<	387	14.4	100
Sum	2693	100	100

Prevalence and gender distribution of smokers are shown in table 2. Five hundred and forty (19.9%) subjects reported regular use of cigarette sometimes in their life, out of which 381 (14.1%) were current smokers. Sixty two point two percent of current smokers used less than 10 cigarettes, 32.3% between 10 to 20 and only 5.5% more than 20 per day (94.5% of smokers smoked 20 or less than 20 cigarettes per day).

Cigarette smoking was significantly less common among women than men ($p < 0.001$). Among the 381 people who were current smokers, 113 (29.7%) were women. The percentage of women among the past and present smokers (n=540) was 31.8% (n=172). The mean number of cigarettes smoked daily in women (7.5 ± 7.3) were significantly ($p < 0.01$, $t = 3.136$, $df = 342$) less than men (10.6 ± 8.8).

Table 2. prevalence and gender distribution of smokers

Smoking status	Males n (%)	Females n (%)	Total n (%)
Current smokers	268 (17.5%)	113 (9.6%)	381 (14.1%)
Past smokers	100 (6.5%)	59 (5%)	159 (5.9%)
Smokers (past or present)	368 (24%)	172 (14.6%)	540 (20%)

The first cigarette smoking occurred before the age of 25 in 74.1% of the smokers. Twenty-five (4.6%) smokers did not reveal when they started their smoking habit. In 13.5% of the smokers smoking begun sometime between 25 and 35 years of age. Only 7.8% started smoking after the age of 35.

166 (43.6%) of current smokers did not report any desire to quit smoking. However, 215 (56.4%) reported that they had tried to quit smoking sometimes in the past. Forty six point two percent (n=176) of smokers had a history of 1 to 4, 5.5% (n=21) 5 to 9 and 4.7% (n= 18) 10 or more attempts to quit cigarette smoking.

One hundred fifty nine (29.4%) subjects had a history of smoking but were abstinent from nicotine at the time of the interview. Among them 71 people (13.1%) were abstinent for at least one year, 26(4.8%) for less than one year.

Discussion

According to the results of our survey, the prevalence of lifelong and current cigarette smoking in Tehran is 19.9% and 14.1% respectively. Although self-reporting has generally been found to be accurate in population-based surveys among adults in other parts of the world (22), these figures may have been an underestimation of the prevalence of smoking due to low response rate and also self-reported method of data collection in Iran.

The prevalence of cigarette smoking in this study is higher than the prevalence reported by Ministry of Health (Iran) and National Research Center. In our study most of the smokers reported that they smoked less than 10 cigarettes per day (62.2%) and only 5.5% of smokers said that they use more than 20. In another word, 94.5% of smokers smoked 20 or less than 20 cigarettes per day. If the number of smoked cigarettes per day can be considered as an index for nicotine dependency, only small numbers of smokers (5.5%) in our study could be classified as nicotine dependent.

In our study the prevalence of cigarette smoking and also the number of cigarettes smoked daily was significantly less frequent among women than men. This is in contrast to the results of studies reported from developed countries where the difference between the prevalence of cigarette smoking in men and women has been decreasing in recent years. Since in Iran, society seems to be more tolerant of men's smoking, women may tend to hide their smoking habit to avoid social stigmatization. The effect of cultural attitude toward cigarette smoking of women has been seen in other countries such as Japan. Kawakami et al. reported a similar finding regarding gender difference in the rate of smoking (23).

The number of attempts to quit in the present study is lower compared to figures reported in other countries. According to other studies, three fourth of all cigarette smokers have tried to quit at least once in their life (24). Our study shows that 56.4% of smokers had tried to quit smoking. However, 44.6% had never attempted to quit. In contrast to countries like England, cigarette smoking in Iran is not currently forbidden in most restaurants and public places. Therefore smokers are not under any social pressure to quit smoking.

There are numbers of limitations to generalize the results of this study. Firstly, adolescents usually hide their smoking habit from their family and therefore they may not have revealed it in the interview. Secondly, the possibility of recall bias should be taken into account as some of the information with regard to the past habits might not have been accurate. And lastly, our study was conducted on the population of the 6th district of Tehran which may or may not be a representative of the whole population.

Unfortunately, there is no legislation to prohibit the sale of cigarettes to teenagers in Iran. Adolescents and young children can buy and smoke cigarette in public places without any limitations. Because our study reveals that most smokers start smoking before the age of 25, it would be ideal to implement the preventive strategies at schools and universities to be able to target this age group.

Apart from educational strategies, we also believe that there is a need for new governmental legislations to prevent easy access of young population to cigarette in supermarkets and public places.

Since few epidemiological studies of nicotine use have been done in Iran, it may be appropriate to conduct similar studies in different part of the country.

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