Tanaffos (2004) 3(10), 53-61

Pattern of Cigarette Smoking in an Iranian Village

Ali Pasha Meysami [1], Seyed Mohammad Ghodsi [2], Behzad Eftekhar [2]

[1] Department of Community Medicine, [2] Department of Neurosurgery, Sina Hospital, Tehran University of Medical Sciences and Health Services, TEHRAN-IRAN

ABSTRACT

***Background**: Financial burden due to tobacco use is known all over the world. A high percentage of preventable cancers, respiratory and non respiratory diseases are due to cigarette smoking.*

Mortality rate due to cigarette smoking is approximately 4 million deaths per year at the present time; this figure is going to reach 10 million deaths per year by the year 2020 if the present trend continues. What makes countries and different districts different from each other in regard to the severity of the risks of cigarette smoking is the prevalence of cigarette smoking, mean age of starting smoking, and mean number of cigarettes smoked daily in that area.

***Materials and Methods**: A weighted representative sample of 310 inhabitants of North rural area (Babol city) was selected randomly in the year 2002. The data were collected by face to face interview and daily smoking prevalence was 28.2%(The standardized rate directly according to the sex is about 17.15%).*

***Results**: The mean age of starting smoking in smokers was 21.4%. More than 80% of persons stated that they had started smoking before the age of 25 years. The mean number of cigarettes smoked daily was 16.8 cigarettes per day.*

Conclusion**: Female gender (p<0.000), having higher level of education (p=0.023), and increased age (p=0.041) were recognized as the distracting factors from cigarette smoking.* ***(Tanaffos 2004; 3(10): 53-61)

***Key Words**: Cigarette Smoking, Iran, Village*

INTRODUCTION

Cigarette smoking can cause various physical, mental and social damages to the health of human beings.

Cigarette smoking is known as the most important cause of preventable cancers in human beings (1). Not only the lung cancer which up to 90% of its cases are due to cigarette smoking but the rate of some other common cancers have been increased up to 40% due to cigarette smoking (2).

Discussing financial burden of the disease and evaluating the wasted years so many acute and chronic diseases are known to be caused by cigarette smoking.

As a sample, it is enough to mention chronic bronchitis, asthma, and emphysema which are related to tobacco use up to 75%. Ischemic heart disease up to 50% increased risk is related to cigarette smoking.

Correspondence to: Meysami AP
Tel.: +98-912-2001383
E-mail address: meysamie@ sina.tums.ac.ir

As a whole, mortality rate due to cigarette smoking is approximately 4 million deaths per year. This figure is going to reach 10 million deaths a year by the year 2020 (1,2,3,4) if the present trend continues.

To decrease the rate of cigarette smoking and to eliminate its related dangers, it is necessary to recognize the rate of its prevalence and the factors affecting the way of cigarette smoking as the first step (5).

According to WHO report, the prevalence of cigarette smoking in men is 47%, and in women12%. This figure in men and women of developing countries is 25% and 7% respectively (6).

According to National Research done in 1996, the prevalence of cigarette smoking was estimated to be 14.6%, and the amount of cigarettes smoked was about 13.6 cigarettes a day. In this research, 1/1000 of the population were evaluated in a Comprehensive National Survey and the age of starting smoking in 66% of persons was below 24 years. According to these figures, only the cost of providing this amount of cigarettes was estimated 9300 million Rials (7).

In "Tehran Lipids and Glucose Study" (TLGS) which was conducted in district 13th of Tehran, pattern of cigarette smoking was paid attention too. The rate of daily cigarette smoking was estimated to be 10.6%.

According to the results of this study, the prevalence of cigarette smoking among men was 10 times greater than that in women; also, the highest number of cigarettes smoked was in the age range of 35 to 44; only 8% of them were heavy smoker (8).

According to the results of this study, the amount of cigarettes used among illiterate people in comparison with literate and married was higher with statistically significant difference (8).

In this article, the authors state that they didn't find any published survey in regard to prevalence and pattern of smoking in rural area, and they tried to elucidate the ambiguous points in the use of cigarette from the stand point of amount of the cigarettes smoked as well as the pattern of smoking (habitual or non habitual and according to general variables) and determining the factors affecting the way of cigarette smoking in a rural area of the country (5,9).

MATERIALS AND METHODS

This study was performed as a cross-sectional study in the summer of 2002 in Khoshroodpay village which is one of the rural areas of Western Bandpay district of the province of Babol situated 24 kilometers from city center. Total population of the area according to the statistical results obtained from health centers of villages of the rural area was about 25500 persons. Approximately 30% of the population were under 15 years of age and were not included in the population range of the study.

Target population of this study were all individuals above 15 years of age who were inhabitant of the limits of Khoshroodpay rural area. The sample size was calculated as 310 assuming national smoking prevalence of 14.6%, type one error of 0.05 and farthest acceptable difference of 0.25 (d= 0.0365).

The sampling was done randomly; classified and weighed according to the ratio of the population of each village of this rural area. (Khoshroodpay, Sefidtoor, Kardicola, Serbora, Parikola, Lamsocola, Maghricola).

The method of gathering data was in the form of direct questioning from randomly selected families according to the registered families of each village and recording these data in a classified questionnaire which has been determined according to the standards presented by WHO. This was pretested according to the protocol of guaranteed quality of the study and under direct supervision of the person in charge of the study.

The number of cigarettes smoked daily were questioned according to this format and those who smoked more than 20 cigarettes a day were considered as heavy smokers (10).

To achieve the accuracy, the data were entered into the computer using SPSS software version 10.5 by two independent operators. To analyze the data, Chi- square, t-test, ANOVA, Multiple Logistic Regression, Direct Standardization Rate (DSR), with two statistical software, SPSS ver. 10.5 and STATA professional 7.0.

RESULTS

The mean age of the studied population was 45.8±15.02 years. The youngest person was 16 years old and the eldest was 81 years. There were 35 female (11.3%) and 274 male (88.7%) subjects.

The educational level of the studied population announced by the people questioning were as following:

Illiterate: 98 persons (31.7%)

Only reading and writing: 69 persons (22.3%)

Up to 9th grade: 72 persons (23.3%)

High school certificate: 34 persons (11%)

2 years of college: 20 persons (6.5%)

Bachelor degree and over: 16 persons (5.2%)

The estimated level of education according to this research was 68.3% (Figure 1)

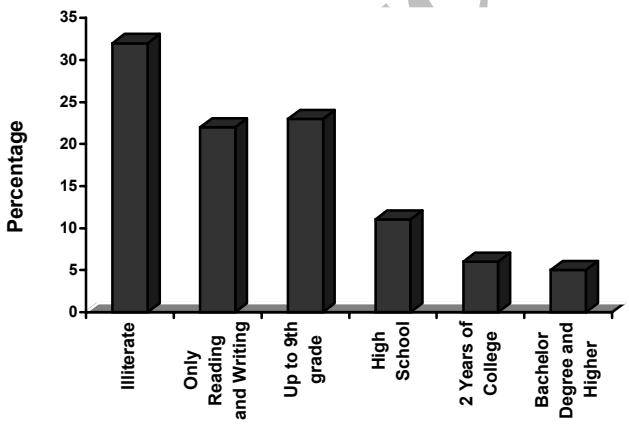

Figure 1. The frequency of different levels of education in the studied population.

281 persons (92.1%) of the studied population were married, 5(1.6%) were single, one (0.3%) was divorced and 18(5.9%) were widow. From the stand point of job status, 151 (49.3%) were farmers, 23 (7.5%) were ranchers, 22 (7.2%) were housewives, 33 (10.8%) were jobless, 2 (0.7%) had retired, 40(13.1%) were employed by the government sector, 10 (3.3%) were employed by the private sector, 20(6.5%) were storemen, and 5(1.6%) were students.

According to this study the unemployment rate in this area was estimated to be 10.7% (Figure 2).

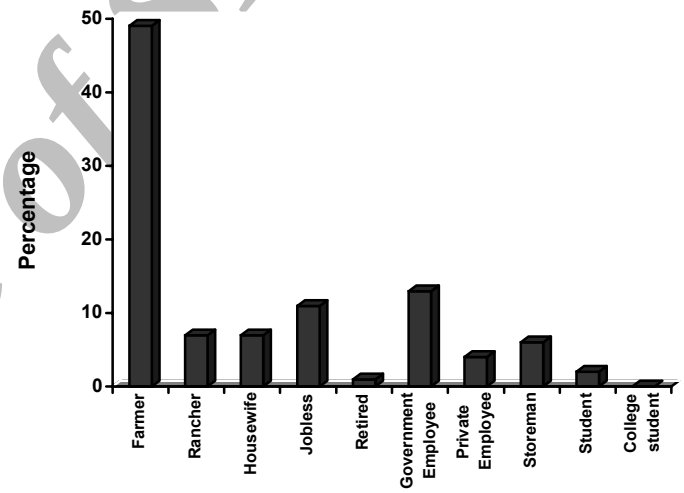

Figure 2. The frequency of different types of jobs in the studied population.

The prevalence of cigarette smoking in the studied population according to what was announced by them was 28.2% (CI= 95%= 23.20%- 33.52%).

The rate of cigarettes smoking among women was 2.9% and 31.4% in men (p<0.000).

Female to male ratio of the chance of being a smoker was equal to 0.064 and with the CI= 95% was equal to (0.009-0.447) (Figure 3).

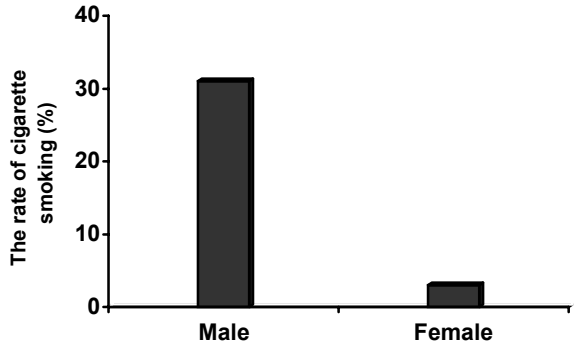

Figure 3. The amount of cigarettes smoked in the rate of more than one cigarette per day according to sex.

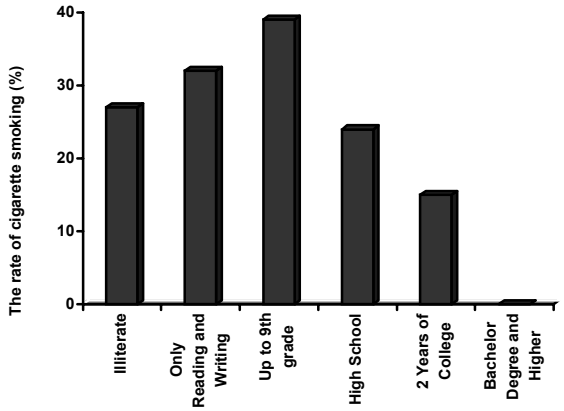

Figure 4. The amount of cigarettes smoked in the rate of more than one cigarette per day according to the level of education.

Considering the difference in the ratio of being smoker between male and female while the gender rate was approximately 1, the study sample of the target population (the ratio of the male smoker to female smoker was equal to 1/8) and presence of a statistically significant correlation between the sex and the rate of cigarette smoking, it is essential to standardize the calculated rate according to estimated and determined sex ratio of the studied population. This was performed and the direct standardized ratio of cigarette smoking in this population with the equal sex proportion of total population was estimated as 17.15% (CI= 95%= 13.12%- 21.82%) according to the total population registered by health centers.

Considering the point that the definition of cigarette smoking in this study is habitual smoking of more than one cigarette a day, the standardized rate achieved actually presents a proportion of persons of the population who smoke in the amount that are at risk for the dangers of cigarette smoking.

The number of cigarettes smoked according to the level of education was different; it is demonstrated in figure 4.

Maximum rate of cigarette smoking was detected in the educational level of 9th grade (39%) and minimum rate of cigarette smoking seen in the level of bachelor degree and above was about 0% (p= 0.023).

The rate of cigarette smoking in the married individuals compared with other groups (according to marital status) was higher (29.5% in comparison with 12.5%), but this difference was not statistically significant (p=0.075).

The rate of cigarette smoking according to the type of job was different, and this difference was statistically significant (p<0.000). This rate in the job groups of housewife, student, and university student was the lowest (0%), while in the job groups of retired, rancher, and employed by the private sector was the highest (100%, 61% and 60% respectively) (Figure 5).

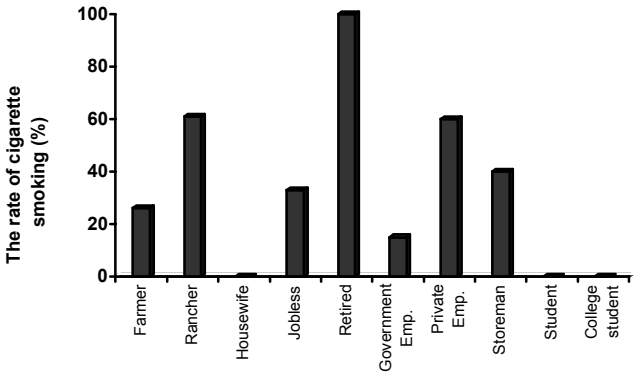

Figure 5. The amount of cigarettes smoked in the rate of more than one cigarette per day according to the type of job.

The mean age of starting smoking was 21.4 years of age (CI 95%= 20.2-27.7) with a minimum and maximum ages of 15 and 40 years respectively.

More than 80% of persons under study have stated that they started smoking before the age of 25 yr.

There was no significant statistical difference according to the mean age of starting smoking among different job groups (p=0.34), different levels of education (p=0.63), marital status (p=0.71), and gender (p=0.79).

The mean number of cigarettes smoked per day was 16.8 (CI 95%= 15.4-18.3) (from 1 to 40 cigarettes per day). Among them, 5.7% of the people smoked more than 20 cigarettes per day; also, according to WHO criteria, they are classified as heavy smoker (CI 95%= 3.1-8.3). Statistically, there was no significant difference between the average number of cigarettes smoked per day according to different job groups (p=0.35), level of education (p=0.42) marital status (p=0.10), and gender (p=0.66).

Finally logistic analysis was performed to control the altering effects of independent variables related to cigarette smoking.

To perform this analysis, job variable did not enter into the analysis, because of being a nominal variable and not having the required entering qualifications.

As demonstrated in Table 1, in confirming the results of single variable analysis presented before, female gender, increased age and higher level of education have a protective effect against cigarette smoking but marital status did not have a significant effect on the number of cigarettes smoked by the studied population.

Table 1. Odds ratios and CI 95% of the factors affecting cigarette smoking.

	Sig.	EXP (B) OR	95%C.I.for EXP (B) OR	
			Lower	Upper
Sex female vs. male	0.009	0.062	0.008	0.496
Age for each year increase	0.041	0.977	0.955	0.999
Educational For each level increase	0.015	0.740	0.580	0.943
Marital status married against others	0.920	1.074	0.267	4.318

DISCUSSION

The crude rate of daily cigarette smoking in the studied population was 28.2%, and standardized rate directly according to sex was 17.15% considering CI= 95% of the standardized rate (CI95%=13.12%-21.82%). This figure in comparison with the results of National Research did not show a statistically significant difference (7).

However, it seems that in the National Research lifetime prevalence of cigarette smoking was estimated while in this research daily cigarette smoking has been estimated.

Therefore, precise comparison between the two is impossible since the definitions are different.

Estimated total rate in both sexes or with separation of men and women in comparison with the prevalence of cigarette smoking estimated by WHO does not show a significant difference. However considering the rate of daily and habitual cigarette smoking in the studied population, definitive statement given in this regard must be taken with a greater caution.

In comparison with the results of the carbohydrate and lipid study, number of cigarettes smoked in this population is more than the estimated rate in district

13th of Tehran. Based on the similarity of variable definition and methodologic similarity between these two studies, this comparison has a higher certainty (8). The higher rate of cigarette smoking in men in comparison with that in women studied population was slightly higher than other studies but was in the same pattern with all of them (6,7,8).

Also similar to most results obtained by other researches and communities, the rate of cigarette smoking in this population decreases with an increase in level of education. According to the fact that these figures are not the same as those in different studies, it is prudent to perform other researches studying the relation between the level of education and cigarette smoking as well as considering special studies in regard to awareness, insight and act of smoking (6,7,8).

In this obtained pattern, increased rate of cigarette smoking is noted up to the 9th grade, and after that the trend of cigarette smoking decreases.

Perhaps youth's tendency to show personality, effects of puberty, the need for show-off, absence of adequate supervision by the families and school authorities, lack of special laws in the country in regard to prohibition of selling cigarette to the younger age groups and students can be considered as effective factors in this increased trend of cigarette smoking.

The difference observed in smoking pattern among different job groups can be explained by difference in level of income, special conditions of working atmosphere or cultural conditions governing the social class of these job categories in the region.

It is notable that none of the pervious studies, had evaluated the correlation between the job and the rate of cigarette smoking.

One of the important points which they have paid attention to in this study is the age of starting smoking.

According to the accumulative effects of cigarette smoking in the development of dangerous consequences attributed to it, starting cigarette smoking at a lower age is very important and noteworthy.

It seems that these information give a more clear basis for the authorities of the country and the researchers for planning preventive programs against cigarette smoking.

The average number of cigarettes smoked per day by smokers of this area demonstrates habitual pattern of cigarette smoking close to high risk rate (6).

The average number of cigarettes smoked per day in comparison with the rate estimated by National Research did not show statistically significant difference.

In other studies, they have not paid attention to the number of cigarettes smoked as a quantitative variable and have only mentioned classified information (2,6).

Therefore, the rate of cigarette smoking at the level of heavy smoker does not show a significant difference with the results of the carbohydrate and lipid study in Tehran considering the CI= 95%. In regard to the number of cigarettes smoked, the rate of more than 20 cigarettes a day is similar in both studies. Considering the lack of information in this regard in other studies (National Research of Health Survey), it is impossible to make a statement (6, 8).

It is notable that there is no relation between the number of cigarettes smoked with other variables related to cigarette smoking. Beginning of cigarette smoking and number of the cigarettes smoked are independent risk factors.

It seems that designing specific studies to determine the factors affecting the increase in the number of cigarettes smoked by the smokers is an important factor in regard to decreasing the financial burden due to cigarette smoking in the communities. Increased age and decreased rate of cigarette

smoking is almost similar to the results obtained in the carbohydrate and lipid study and is also similar with the data related to the age of starting smoking and population at risk which are in lower ages and under 25 years of age (8).

Non-stop immigration of youth from villages to cities is one of the specific points in rural populations of the country obtained in studies with the same target population (rural). It is effective in determining the pattern of cigarette smoking and has influenced this study. That is why mean age of individuals in this rural area is higher in comparison with that of city population. It is expected that smoking related complications develop more in elder populations than in younger ones.

One of the important cultural problems of the rural populations is the dislike of women in participating in social activities. This is why the women participation in this study was much lower than in the men, which of course was solved by direct standardization of the estimates.

According to the relation present between the level of education and rate of cigarette smoking which has been stated differently in various studies, the fact that level of education in the studied population is less than acceptable rate (80%) and is in the range of 68.3% according to standards presented by WHO may be effective in the tendency towards smoking (8).

Tensions and financial problems are complicated factors which are more or less effective in all features of human population.

Participation of majority of the people under study in farming in spite of scarcity of farming lands in this region by itself is one of the important factors in decreasing the income of the majority of the inhabitants. This makes the relation between job and the rate of cigarette smoking more complicated than other societies.

Unemployment rate in this district is estimated to be 10.8% which is almost the same with the unemployment rate all over the country and among active population of the country, and it is a social complexity and fundamental factor in appearance of misappropriate behaviors such as cigarette smoking.

CONCLUSION

It seems that planning for quitting methods and decreasing tendency of people towards smoking is considered as a priority in public health even in a rural district far from the city centers.

Fortunately, the rate of cigarette smoking in women is still less than men and in rural areas is the same as city areas. Noting this point can be helpful in finding probable solutions for decreasing cigarette smoking. The most important of all, keeping the present trend and planning programs to prevent an increase in cigarette smoking in women is very important. In spite of pros and cons stated about the level of education and cigarette smoking (6,8), awareness about the dangers and risks of cigarette smoking certainly plays an important role in changing the insight and decrease in number of cigarettes used as an effective solution.

Furthermore, performing complementary researches beside preventive interventions seems essential to clarify the real face of cigarette smoking and factors affecting the rate of its use in urban and rural areas of the country.

REFERENCES

1. Emami J. Smoking and Cancer. ***Journal of Isfahan Medical School*** 1994; 12 (40): 5.
2. MMWR Morbidity Mortality Weekly Report, Centers for Disease Control and Prevention. Cigarette smoking attributable mortality and years of potential life lost in United States, 1990-1993; 42: 645-9.
3. Masironi R. A strategic proposal for the development of national tobacco health program. WHO report, Geneva,

1990; 4: 2-10.

4. Hussain Khan Z. Cigarette a friend or foe. ***Medical Journal of Islamic republic of Iran*** 1994; 8 (3): 201-7.
5. Slama Karen. Tobacco Control and Prevention. A guide for Low Income Countries, IUATLD, Paris, 1998; 12-70.
6. WHO information. Tobacco epidemic: health dimentions.1998. Fact sheet 154. Accessible in: http:/www.who.int/inf-fs/en/fact/59-html.
7. Mohammad K, Zali MR, Masjedi MR, Majdzadeh SR. Cigarette Smoking in Iran "Based on national health Survey". ***Journal of medical council of Islamic Republic of Iran*** 1998: 16(1): 64-65.
8. Emami H, Habibian S, Salehi P, Azizi F. Cigarette smoking pattern in one district of Tehran in the year 2001, Tehran lipid and glucose study (TLGS). ***Pajouhesh dar pezeshki*** 2001; 27 (1): 47-52.
9. Parizadeh SMJ. Study of the rate of Tobacco Smoking in Villages of Khorasan Through Health Houses. ***Medical Journal of Mashad University of Medical Sciences*** 1998; 38 (50): 9.
10. Bruin A, Picavet H, Nossikov A. Health interview surveys towards international harmonization of methods and instruments. Copenhagen: WHO-Europe, CBS-Netherlands, 1996.