

RESEARCH ARTICLE

Factors Associated with Cigarette Smoking in Central Parts of Iran

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Abstract

Background: This study aims to assess factors associated with cigarette smoking in central parts of Iran. **Materials and methods:** We used the data of the post intervention phase of Isfahan Healthy Heart Program (IHHP) that was conducted in 2007. Logistic regression was used for calculating crude and adjusted Odds Ratios (OR). The group with the least prevalence of smoking was considered as the Reference Group (RG) and the OR for other parts of the variable was calculated based on the RG and reported with a confidence interval of 95%. **Findings:** Generally, 9513 individuals participated in the study, of which 13.5% were smokers (26.2% of men and 0.8% of women). The OR for cigarette smoking in men compared with women in (RG) was 13.89 (95% Confidence Interval (CI) 7.44–24.82). Among rural areas, compared with urban areas in (RG), the OR was 0.98 (95% CI 0.82–1.15); and among elementary education level compared to illiterate individuals the OR was 4.37 (95% CI 1.68–10.76). The OR in individuals in the age group 35–44, compared with the age group of 65 and older in (RG) was 2.49 (95% CI 1.81–3.45). The place most used for cigarette smoking was streets (72.1%); and the main reason for starting or continuing cigarette smoking, according to smokers' opinions, was pleasure and fun. **Conclusion:** The highest number of smokers was in 35–44 years men, in rural areas, with elementary education level; so, they are the ones who need more attention through implementation of educational programs for awareness, improved attitudes and practices, and smoking cessation programs.

Keywords: Cigarette- odds ratio- logistic regression- Iran

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Introduction

Cigarette smoking is a serious public health issue and is one of the most important causes of preventable deaths globally (Ramström, 1997). It leads to a higher risk of cardiovascular disease occurrence among smokers; further, it causes 20% of all deaths due to cardiovascular diseases (Jamrozik, 2005). Based on the study of Murray and et al, cigarette smoking globally leads to 4 million cases of death, and this number is expected to reach 8.4 million individuals by the year 2020 (Murray and Lopez, 1997). World Health Organization(WHO) reports that globally one third of individuals over 15 years of age are smokers while only 30% of them live in developed countries (Peto et al., 1992; Peto, 1994). Past studies show an increase in the world's cigarette smoking rate over the last two decades; the amount increased from 11.1% in 1994 (Boshtam et al., 2000) to 18% in 2007 (Alikhani et

al., 2009). The spread of cigarette smoking among Iranian youth is also increasing (Ansari et al., 2007), such that 21% of men and 7% of women between the ages of 19 and 49 are smokers (Sarraf-Zadegan et al., 2004). Individuals spend \$309,871 every day or \$585,806,367 yearly to purchase cigarettes while the country's health care system spends approximately \$1,757,419,103 to treat the adverse effects of cigarette smoking (Mackay and Crofton, 1996).

Based on the world pattern of cigarette smoking, an average of 50% of young men and 10% of young women were smoker cigarettes. In 2010, there were 5 million cases of cigarette-related deaths and this is expected to increase to 10 million people over the next several decades (Peto and Lopez, 2004; Jha, 2009; Peto et al., 2012).

About 100 million cases of death by cigarette smoking occurred all through the 20th century, most of which happened in developing countries (Peto and Lopez, 2004; Jha, 2009). If the current pattern for cigarette smoking

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continues, it is expected that it will lead to one billion deaths in the current century, most of which will occur in countries with low or average incomes. Also, about 50% of these deaths will occur before the age of 70 (Peto and Lopez, 2004; Jha, 2009). In 2013, WHO required the countries of the world to decrease the prevalence of cigarette smoking to one third of its current rate by 2025 (Geneau et al., 2010). This decrease would lead to a decrease of 200 million cases of deaths in the remainder of the current century (Peto and Lopez, 2004; Jha, 2009).

Cigarette smoking is also a risk factor for non-communicable diseases, such as ischemic heart diseases, cerebrovascular diseases, lung diseases, and cancer (Ezzati et al., 2002). Many social and financial factors, such as education, occupation, and monthly wages, are related to cigarette smoking (Siahpush and Borland, 2001; Barbeau et al., 2004; Laaksonen et al., 2005). Different studies have shown that cigarette smoking occurs more among individuals with less education (Cavelaars et al., 2000; Giskes et al., 2005). Manual workers and individuals who have stressful occupations are more likely to smoke cigarettes than other individuals like staff and managers (Control and Prevention, 2000; Howard, 2004). Some life style factors, such as physical activity, nutritional status, and obesity are also related to cigarette smoking (Smith et al., 2009; Stea et al., 2009). The first level of the IHHP showed that social and demographic factors in Iran are similar to men's global cigarette smoking habits (Bahonar et al., 2011). However, cigarette smoking among Iranian women is not an acceptable behavior, so the cigarette smoking rate for women is much lower than that for men. Of course, because there is a social ban on smoking for women in Iran, self-reporting is unlikely to be reliable (Sarraf-Zadegan et al., 2004). Before we can implement prevention and control programs for risky behaviors and diseases, we must first understand and describe the epidemiological aspects and related factors of the beginning and continuation of the behaviors leading to these diseases. Therefore, the aim of this study is to assess factors associated with cigarette smoking in central parts of Iran, including the counties of Isfahan, Najaf Abad, and Arak, based on the data of the post intervention phase of Isfahan Healthy Heart Program (IHHP).

Materials and Methods

This is a cross-sectional study that was conducted with the use of the post intervention phase of Isfahan Healthy Heart Program (IHHP) that was conducted in 2007. This program was completed by the Isfahan Cardiovascular Research Institute, and the Health Center of Isfahan province, both of whom are affiliated with Isfahan University of Medical Sciences. The details for the method of implementing the IHHP were presented in the study by Sarrafzadegan et al., including the sample size, the implementing method, data entry, and data analysis (Sarraf-Zadegan et al., 2003).

Based on the IHHP in Isfahan and Arak provinces, a population of 1,895,856–275,084 and 668,531 individuals from Isfahan, Najaf Abad, and Arak were used to randomly select the participants, respectively.

Sampling was completed based on population clusters, place of residence (urban and rural), and the population distribution determined in 1999. The number and selection of samples were calculated in terms different age groups in both genders based on the distribution ratio of the society. The number of samples was doubled because of the clustering method, and the total number of samples needed for all three counties was 12,500 individuals, taking into consideration the number of sample losses. In the first level, 12,514 individuals over 19 years of age were selected in a random two-phase cluster sampling. First, every city was divided into different parts and then these parts became various clusters; there were an average of 1,000 families in every cluster, with 5 to 10 families chosen randomly from each cluster. Then, a 19-year-old or older from each family was chosen to enter the study, provided that the individual was Iranian, a resident of city for at least six months, and mentally healthy; and in case of women, not pregnant. In current report, individuals are considered that all study variables for them are registered completely. In fact individuals that have any missing for study variables were not considered in the current report. Therefore, under these conditions, 9,513 individuals considered in the study, that 4669 individuals were from the Isfahan province (1,530 individuals from Najaf Abad city, and 3,139 individuals from Isfahan city), and 4,844 individuals were from the Arak province (all from Arak city).

A questionnaire was used for registering demographic information, education, attitudes and behaviors of individuals in the fields of nutrition, cigarette smoking, sport activity, cardiovascular diseases, lifestyle performance, ways to cope with stress, and physical examinations. The information was completed by trained interviewers. Validity of the questionnaire was confirmed by relevant experts. The reliability of the questionnaire using Cronbach's alpha was 0.81; the reliability regarding the situation of cigarette smoking was 0.83; and the reliability regarding questions of causes for the start or continuation was 0.89. It should be noted that questions about the causes of the start and continuation of cigarette smoking were selected based on the most common causes obtained in scientific literature review. The relevant experts trained interviewers on how to complete the questionnaire in 5 sessions. All information gathered was evaluated by 10 trained health individuals with associate degrees, and necessary actions were completed to solve any problems.

Statistical analysis

Individuals smoking status was one of the indexes reviewed in the study; for this purpose, individuals were categorized into 2 groups of smokers and non-smokers. An individual who smoked at least one cigarette a day was considered a current smoker, and those who didn't were counted as non-smokers (Abolfotouh et al., 1998). Variables were entered into the study and statistical models such as gender (man, woman), age group (19–24, 25–34, 35–44, 45–54, 55–64 and 65 and above), education level (illiterate, elementary school, junior high school, senior high school and college education), marital status

(married, single and no wife), place of residence (urban, rural), Physical activity (never, hardly ever, sometimes, often, always), occupation (housekeeper, governmental, self-employed, jobless, retired and school or university student). The statistical T-test was used to check and compare the age averages between the two genders. The group with the least prevalence of cigarette smoking was considered to be the Reference Group (RG) for calculating the Odds Ratio (OR) of cigarette smoking. The OR for other components' of that variable was calculated based on the RG using logistic regression. The adjusted OR was calculated by entering all variables using the Enter method; it was reported with a confidence interval of 95%. SPSS statistical software version 18 was used to analyze the study data.

Results

In total; 9,513 individuals (1,530 from Najaf Abad city; 3,139 from Isfahan city, and 4,844 from

Arak counties) were included in the study; the general prevalence of cigarette smoking in central parts of Iran was 13.5% (1,283 smokers and 8,230 non-smokers), in men 26.2% (1,244 of 4,751 individuals) and in women 0.8 % (39 of 4,762 individuals). The prevalence of cigarette smoking in Najaf Abad city was 14.3% (219 smokers and 1,311 non-smokers), in Isfahan 12.1% (381 smokers and 2,758 non-smokers) and in Arak 14.1% (683 smokers and 4,161 non-smokers). The highest prevalence of cigarette smoking based on age groups was in the age group of 35– 44 (15.9 %); after that was the age group of 25– 34 (15.8) and the lowest prevalence was seen in the age group of 65 and above (8.8%); also, in rural areas, 14.2% of individuals, and in urban areas, 13.2% of individuals were smokers (Table 1).

Given the fact that the prevalence of cigarette smoking in women is lower than men, the women's group was considered the RG in calculating the OR based on gender. The adjusted OR of cigarette smoking in men compared to women is 13.89 (95% Confidence Interval (CI) 7.44–

Table 1. The Prevalence of Smoking Cigarette and the Crude and Adjusted Odds Ratios Based on Demographic Features in Central Parts of Iran

variable		smoker	Non-smoker	crude odds ratio	adjusted odds ratio*
Sex	men	1244(26.2)	3507(73.8)	42.95(31.14-59.25)	13.89 (7.44 – 24.82)
	women	39(0.8)	4723(99.2)	reference	reference
Age groups	19-24	216(11.5)	1658(88.5)	1.35(1.03-1.77)	2.14 (1.41 -3)
	25-34	459(15.8)	2443(84.2)	1.95 (1.52 – 2.5)	2.70 (1.95 – 3.90)
	35-44	300(15.9)	1587(84.1)	1.96 (1.51 – 2.54)	2.49 (1.81 – 3.45)
	45-54	137(11.8)	1027(88.2)	1.38 (1.04-1.85)	1.80 (1.15 – 2.65)
	55-64	89(11.9)	662(88.1)	1.39 (1.01 – 1.92)	1.75 (1.18 – 2.36)
	65 years old and above	82(08.8)	853(91.2)	reference	reference
Education	Illiterate	137(04.9)	1595(92.1)	reference	reference
	Elementary (1-5 years)	373(14.6)	2188(85.4)	1.98(0.75 – 5.14)	4.37 (1.68 – 10.76)
	Junior high school	314(19.2)	1323(80.8)	2.76 (0.97 – 6.59)	3.74 (1.41 –8.96)
	Senior high school (9-12 years)	324(13.8)	2017(86.2)	1.87 (0.64 – 4.75)	2.88 (1.09 – 7.22)
	College education	135(11.1)	1107(88.9)	1.41 (0.45 – 3.94)	2.09 (0.79 – 5.1)
Marital status	married	1021(13.8)	6372(86.2)	3.8 (2.41 – 5.97)	0.93 (0.63- 2.51)
	single	242(14.9)	1383(85.1)	4.13 (2.59 – 6.60)	0.78 (0.46 – 1.1.9)
	No wife	20(04.04)	475(95.96)	reference	reference
Place of residence	urban	876(13.2)	5776(86.8)	reference	reference
	rural	407(14.2)	2454(85.8)	1.09 (0.96 – 1.24)	0.98 (0.82- 1.15)
Athletic activity	never	794(13)	5333(87)	1.01 (0.75 – 1.35)	1.53 (1.12 – 2.09)
	Hardly ever	199(16.1)	1036(83.9)	1.3 (0.94 – 1.79)	1.75 (1.25 – 2.46)
	sometimes	160(13.5)	1027(86.5)	1.05 (0.76- 1.46)	1.29 (0.91 – 1.82)
	often	74(14)	454(86)	1.1 (0.76 – 1.6)	1.21 (0.82- 1.79)
	always	56(12.8)	380(87.2)	reference	reference
Occupation	Housekeeper (for women)	29(0.7)	4209(99.3)	reference	reference
	Self-employed	876(28.3)	2223(71.7)	57.19 (39.36 – 83.09)	4.80 (2.56 – 10.23)
	governmental	130(18.5)	572(81.5)	32.98 (21.85 – 49.79)	3.97 (1.82 – 8.25)
	jobless	172(20.2)	680(79.8)	36.71 (24.56 – 54.86)	5.14 (2.89 – 11.20)
	retired	53(12.6)	367(87.4)	20.96 (13.16 – 33.37)	3.41 (1.51 – 7.47)
	University or school student	23(11.4)	179(88.6)	18.64 (10.57 – 32.88)	5.14 (2.82 – 12.88)

*In the adjusted logistic model for estimate adjusted odds ratio every variable adjusted for other variables, but interaction between sex and occupation AND sex and education level weren't entered in model

Table 2. The Frequency of Smoking Tobacco in Different Places and Situations Based on Smokers' Responses in Central Parts of Iran

Places	Yes	No	No response	All received responses
	number (percent)	number (percent)	number (percent)	
At home	866 (67.5)	391 (30.5)	26 (02)	1,257
At the presence of children and teens	544 (42.4)	713 (55.5)	27 (02.1)	1,256
At school, university, workplace (in break times)	528 (41.2)	728 (56.7)	27 (02.1)	1,256
In restaurant or cafe	253 (19.7)	1,003 (78.2)	27 (02.1)	1,256
In taxi or bus	189 (14.7)	1,067 (83.2)	27 (02.1)	1,256
at street	925 (72.1)	332 (25.9)	26 (02)	1,257

Table 3. The Frequency of Smoking Tobacco in Different Situations and Situations Based on Smokers' Responses in Central Parts of Iran

situations	Yes	No	No response	All received responses
	number (percent)	number (percent)	number (percent)	
When you were angry	984 (76.7)	272 (21.2)	27 (02.1)	1,256
When you were tired and bored	930 (72.5)	326 (25.4)	27 (02.1)	1,256
When you were happy	832 (64.8)	425 (33.1)	27 (02.1)	1,256
When you were anxious	928 (72.3)	328 (25.6)	27 (02.1)	1,256
With tea	883 (68.8)	374 (29.1)	26 (02)	1,257

24.82). Also, in comparison with the age group of 65 and above (RG), the adjusted OR in the age group of 19–24 is 2.14 (95% CI 1.41–3). In addition, in the age group of 25–34, the adjusted OR is 2.70 (95% CI 1.95–3.9); in the age group of 35–44, it is 2.49 (95% CI 1.81–3.45); in the age group of 45–54, it is 1.80 (95% CI 1.15–2.65); and in the age group of 55–64, it is 1.75 (95% CI 1.18–2.36).

The lowest prevalence of cigarette smoking was found in the group of illiterate (04.9%); the adjusted OR in comparison with this group (RG) for other education groups was: elementary education level (1–5 years) 4.37 (95% CI 1.68–10.76), junior high school (6–8 years) 3.74 (95% CI 1.41–8.96), senior high school (9–12 years) 2.88 (95% CI 1.09–7.22), and college education 2.09 (95% CI 0.79–5.1). The prevalence of cigarette smoking

in urban residents was lower than in rural areas (13.2 % against 14.2 %, respectively). The adjusted OR of residents in rural areas (RG) compared to urban areas is 0.98 (95% CI 0.82–1.15). Housekeeper women had the lowest prevalence of cigarette smoking (0.7%), and were considered as the RG. The adjusted OR for self-employed individuals in comparison with this group was 4.80 (95% CI 2.56–10.23) for the self-employed; for individuals with governmental occupations 3.97 (95% CI 1.82–8.25), the jobless 5.14 (95% CI 2.89–11.20), the retired 3.41 (95% CI 1.51–7.47), and university or school students was 5.14 (95% CI 2.82–12.88). The crude and adjusted OR of others variables are observable in Table 1.

Reviewing location and situation of cigarette smoking in smokers, it was seen that the most used place for

Table 4. Causes for the Start and Continuation of Smoking Tobacco in Smokers' Opinion in Central Parts of Iran

factor	Yes	No	All received responses
	number (percent)	number (percent)	
Anxiety reduction	490 (38.2)	792 (61.8)	1,282
More mental focus	428 (33.4)	855 (66.6)	1,283
Social acceptance by friends	542 (42.2)	741 (57.8)	1,283
Feeling of being an adult	440 (34.3)	842 (65.7)	1,282
Feeling of being loved	352 (27.4)	931 (72.6)	1,283
Feeling of self-confidence	490 (38.2)	792 (61.8)	1,282
enjoyment	428 (33.4)	855 (66.6)	1,283
Helping to stay up at night	542 (42.2)	741 (57.8)	1,283
Fun and entertainment	440 (34.3)	842 (65.7)	1,282
To forget problems	352 (27.4)	931 (72.6)	1,283
enjoying cigarette's smell	390 (30.4)	893 (69.6)	1,283
Only as a habit	677 (52.8)	606 (47.2)	1,283
Have no idea or involuntary action	297 (23.1)	986 (76.9)	1,283

cigarette smoking during the last week was: street (72.1%), home (67.5%), in the presence of children and teenagers (42.4%), at school, university, or workplace (41.2%), in restaurants or cafes (19.7), and in buses or taxis (14.7%), respectively (see Table 2).

Also, the main situations in which individuals smoked cigarettes were: when angry (76.7%), tired or bored (72.5%), anxious (72.3%), while drinking tea (68.8%), and while happy (64.8%), respectively (see Table 3).

In addition, the main reasons given for the start and continuation of cigarette smoking included fun and entertainment (71.5%), as a habit (65%), enjoyment (52.8%), without any known reason (have no idea), or an involuntary action (47.3%), to forget problems (45.9%), social acceptance by friends (42.2%), anxiety reduction (38.2%), the feeling of being an adult (34.3%), more mental focus (33.4%), the feeling of self-confidence (30.4%), enjoying the smell of cigarettes (30.1%), the feeling of being loved (27.4%) and helping to stay up at night (23.1%), respectively (see Table 4).

Discussion

This study was conducted by aiming at checking some of the causes for the start and continuation of cigarette smoking in central parts of Iran, including the counties of Isfahan, Najaf Abad, and Arak. The general prevalence of cigarette smoking in central parts of Iran is 13.5%, of which 26.2% are men and 0.8% is women. Individuals in the 25–34 age group and 35–44 age group had respectively the highest OR of cigarette smoking, compared to other age groups. Also, rural individuals compared with those in the urban areas (RG), and the lesser-educated compared to the higher-educated (RG) were more likely to smoke cigarettes. The most common locations for cigarette smoking were in the house, and in the presence of children and teenagers. The main situations in which cigarette smoking occurred were while angry, exhausted, and bored, also the main reason for beginning or continuing to smoke cigarette was fun and entertainment.

In this study, generally 13.5% of the individuals in the society were smokers, while in the study done by Mehrabi et al., on the population of 15–64 year-olds in Iran in 2005, it was observed that 17.4% of the population of the country were smokers (Mehrabi et al., 2007). The prevalence of cigarette smoking in Isfahan was 12.1%; in Najaf Abad, 14.3%; and in Arak, 14.1%, which is lower than the national average (Mehrabi et al., 2007). This amount is lower than the prevalence seen in England, at 25%, and in Italy 28% (Nobile et al., 2006). The prevalence in Isfahan is in line with the results of the National Health Survey (NHS) completed in Iran in 1999; the prevalence seen in this survey was equal to 11.9%, which is only slightly different from the prevalence obtained by our study (Mohammad et al., 2001). In this study, the prevalence of cigarette smoking in men is 26.2%, and in women, 0.8%, but in Mehrabi's study, the amount in men was 33.2%, and in women 0.7%, which shows that in both studies, the prevalence of cigarette smoking in men is more than women, but in this study

the prevalence of cigarette smoking in men and women are less than Mehrabi et al.'s study (Mehrabi et al., 2007). This finding is similar to other studies conducted in Korea (Cho et al., 2004), China (Anderson Johnson et al., 2006), several European countries (Nobile et al., 2006), and the USA (Control and Prevention, 2005). In all these studies, it was mentioned that the prevalence of cigarette smoking in men is higher than for women. In addition, most of studies referred to the point that the gap between the prevalence of cigarette smoking among the two genders has decreased all through the time, meaning that the prevalence of cigarette smoking by women has grown at a faster rate compared to men (Musaiger et al., 2003; Anderson Johnson et al., 2006). Also, it would seem that the prevalence of cigarette smoking in Iranian women is likely to be higher than 0.8%, but because cigarette smoking for women in Iran has an inappropriate social image, most female smokers prefer to hide it and in fact give incorrect information to the field interviewers. So, it seems likely that the true prevalence of cigarette smoking in Iranian women is higher than the reported prevalence.

The highest prevalence of cigarette smoking occurs in the 35–44 age group. After that is the 25–34 age group, and the lowest prevalence of cigarette smoking is in the age group of 65 and above. Increase in age based on the results of Emami et al.'s study (2003) in Tehran and other studies conducted in other countries (Babanov, 2005) is among the factors preventing cigarette smoking, which coordinates with the results obtained by the present study. As the same way, Ghorbani et al.'s study shows that the largest group of smokers are in the age group of 40–49, but that in the age groups of 50 and above, increase in the age means led to decrease in cigarette smoking (Ghorbani et al., 2012). Also, in all age groups, the cigarette smoking rate in men is higher than in women, which coordinates with the study results of Mehrabi et al. (Mehrabi et al., 2007).

In Ghorbani et al.'s (2012) study in Semnan, there was an inverse relation between education level and cigarette smoking. This result was also seen in a study conducted among the adult population of the USA (Giovino, 2007). A higher education level indicates a higher level of health literacy, on average. Therefore, an increase in the society's health literacy can lead to an increase in knowledge of adverse effects and disadvantages of cigarette smoking, and consequently lead to a decrease in cigarette smoking. In this study, the lowest rate of cigarette smoking was observed in illiterate people (04.9%). It is likely that this was caused by the higher proportion of women to men in this group. Therefore, women make up 68.3% and men 31.7% of this group. However, the prevalence of cigarette smoking among women was 0.8% and in men 26.2%.

The prevalence of cigarette smoking in singles was 14.9%, which is higher than the prevalence seen in married individuals (13.8%). This result is similar to the results provided by study of Pasha Meysami et al., (2004), but is different from Mehrabi et al.'s study. In Mehrabi's study, married individuals tend to smoke cigarettes more than singles, and the average number of cigarettes singles smoke is less than married individuals (Mehrabi et al., 2007). In this study, the prevalence of cigarette smoking

in the urban population is lower than in that of the rural population; also, in another study in all through the country reached similar conclusions (Mehrabani et al., 2007).

In the current study, the main reason for starting cigarette smoking was fun and entertainment. At home was reported to be the most common place for cigarette smoking by smokers; and they mostly smoke cigarettes when they are angry, tired or bored. Health policies in this field should be designed in ways so that it becomes possible to educate individuals in the skills of controlling anger, reducing anxiety, and spending their free time properly, etc., so that they tend to solve their problems less by smoking cigarette and more by other, healthier methods. On the other hand, access to cigarettes, especially by young people, should be decreased by applying different methods. In different countries of the world, efforts have begun to decrease the spread of cigarette smoking based on its adverse effects, and there have also been successes in this field; these experiences might be suitable for removing or decreasing this problem in Iran. The International Agency for Research on Cancer (IARC) has conducted more than 100 econometric studies on effects of cigarette's tax increase on cigarette's final price; finally, they concluded that an increase in the price of cigarette (tax increase) coordinates strongly with a decrease in cigarette smoking (Chaloupka et al., 2010). For example, a 50% increase in the cigarette price leads to a 20% decrease in cigarette smoking in countries with low, average, and high incomes. Also, doubling the price of cigarettes leads to a decrease in cigarette use to one third of its current rate (Chaloupka et al., 2010).

Some of the advantages of this plan among adults come as a result of quitting or not starting to smoke, and other benefits come from decreasing the number of cigarettes an individual smokes per day (Chaloupka et al., 2010). Increasing cigarette prices has a bigger effect on reducing cigarette smoking in individuals with low income and education (Chaloupka et al., 2010; Jha and Peto, 2014). Further, it prevents young people who smoke cigarettes just for fun from becoming permanent smokers (Kostova et al., 2011). In the USA and England, a ban on advertising cigarettes on TV reduces the possibility of advertisements by other media and advertising possibilities in general, all of which have also led to a decrease in cigarette smoking all through the society (Blecher, 2008). A ban on cigarette smoking in public places also decreases the likelihood that nonsmokers will experience proximity to cigarette smoke; this ban has also led to a general decrease in cigarette smoking all through the society (Callinan et al., 2010; Jha and Peto, 2014). So, in Iran, informing individuals of the adverse effects and disadvantages of cigarette smoking, increasing taxes on importing and selling cigarettes and implementing some effective and scientific programs for smokers to quit smoking, leading to both a decline in smoking prevalence and increase in government income, which could be used for implementing and improving education and health programs in this field.

Limitations

Other factors affecting cigarette smoking status, including lifestyle performance, ways to cope with stress,

economic status, smoking by parents or other family members, the price of cigarettes, and so on, but in this study, limited data did not allow us to investigate the role of these factors. Therefore, it is recommended that other studies consider these factors, and design and implement ways to determine their role in smoking in different parts of Iran.

The highest numbers of smokers were in 35-44 years men, in rural areas, with elementary education level; so, they are the ones who need more attention through implementation of educational programs for awareness, improved attitudes and practices, and smoking cessation programs.

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Conflicts of interest

The authors declare no conflict of interests.

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