

Environmental Tobacco Smoke (ETS) Exposure in People Over 15 years Old in Bandar Abbas

Akram Ahmadizadeh Fini^{1*}, Teamur Aghamolaei²,
Mohsen Dehghani³ and Elham Ahmadizadeh Fini⁴

¹MPH Master of Public Health, Hormozgan University of Medical Sciences, Bandar Abbas, Iran.

²Department of Public Health, School of Health, Hormozgan University of Medical Sciences, Bandar Abbas, Iran.

³Islamic Azad University of Bandar Abbas, Bandar Abbas, Iran.

⁴MS in Health Education Hormozgan University of Medical Sciences, Bandar Abbas, Iran.

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Environmental tobacco smoke (ETS) exposure is an important health risk worldwide and one person dies every 10 seconds because of tobacco-related diseases. So we evaluate the effect of it in people over 15 years old in Bandar Abbas (Iran). This was a cross-sectional study conducted on 387 subjects(172 male and 215 female) who were randomly selected by cluster sampling method. Data were collected using a customized questionnaire consisted of demographic characteristics and questions related to environmental tobacco smoke (ETS) exposure. The collected data were analyzed using the statistical package of SPSS (version 16). The results of the assessments showed that 98.4% and 93.5% of subjects had been exposed to cigarette and hookah smoke, respectively. Furthermore, 12.7% and 14.7% of the subjects were always and often exposed to cigarette smoke, respectively, whereas just 1.6% did not expose to cigarette smoke. About the place of the exposure, 52.2% and 31.3% of the subjects mentioned the public transportations and home, respectively. 93.4% of the subjects were exposed to hookah smoke at home. There was no significant difference between exposure of males and females regarding environmental tobacco smoke exposure. Findings of this study show that a high number of the studied population was exposed to environmental tobacco smoke. Therefore, preventive efforts and educational programs are necessary to make people aware about the harmful effects of the environmental tobacco smoke.

Key words: Cigarette, hookah, environmental tobacco smoke, Passive smoking, Bandar Abbas.

Smoking is one of the most important health problems worldwide threatening the life of human beings¹. Today, human society is contaminated with tobacco consumption more than before. Tobacco use is among the most common cause of death worldwide so that one person dies every 10 seconds because of tobacco-related diseases². Tobacco smoke is involved in the pathogenesis of several diseases regarding different body systems³.

In 2008, World Health Organization confirmed that one billion and 300 million people are smokers who may threaten 3 billion non-smokers as well. This is more than the number of people who may benefit from clean air⁴.

Passive smoking is another important health risk factor globally for children and adults as well as any other persons who are exposed to the second-hand smoke. Non-intentional exposure to smoke means a person who may not intend to smoke but put himself in a closed area with a smoking person and non-intentionally inhales the smoke^{5, 6}.

Scientific assessments show that any person who is under these conditions in home, work and public areas, will be at a high health risk⁷. Several researchers studied the effect of cigarette smoking

* To whom all correspondence should be addressed.
E-mail: Nika 367@yahoo.com

and tobacco chewing on body such as cardiac status and lipid profile in young asymptomatic adults⁸.

Indirect second-hand smoke exposure to smoke of cigarette includes various harmful substances. Environmental Support Organization labels these substances as "Group A" factors causing cancer. In 2003 a series of studies conducted in Mine Suita University on the health effects of second-hand smoke. Findings of these studies showed that nonsmokers who were subject of smoke had an increased level of carcinogen in their blood sample only 4 hours after their presence in that place². Results of a combined analysis of two comprehensive studies conducted at the United States and Europe showed that neighboring of nonsmokers with the smoke of the spouse, colleagues and other people can increase the risk of lung cancer up to %22¹. Furthermore, findings of other similar study indicated that to be exposed with cigarette smoke can increase the coronary risk factor through increasing the fibrinogen⁹.

Smoke is not only harmful for the smoker but for all surrounding people including the children who are suffering from different diseases and further effects. Health statistics show that %40 of the U.S children are living in places with at least one smoker¹⁰. Any contacts of children with smoke may cause a disorder in the health level, difficulties in lung function, asthma and quick death syndrome of infants¹¹. The birth-weight of the infants whose mothers were exposed with cigarette smoke is lower than their counterparts with non-smoker or without exposure to smoke¹².

Unfortunately with non-ignorable findings about indirect threats of smoke, non-smokers may be subject to cigarette smoke in home, working place and different societies and public places². This type of threat is more dangerous than smoking because any breathing of smoke may be effective on other people who have no chance only to be subject to smokes. Therefore, increasing the knowledge of people about defects and charges of contaminated places may decrease further problems and charges and is economic from economic, health and environmental viewpoints. Notwithstanding the high importance of this issue, there has been few studies conducted on this. Therefore, the present study was aimed to determine the environmental tobacco smoke (ETS) exposure in people over 15 years old in Bandar Abbas (Iran).

MATERIAL AND METHODS

Any contamination with tobacco smoke was studied in this partial study and on people older than 15 years old residing at Bandar Abbas city. Since there was not an exact estimation of facing with tobacco smoke in the under study population, we calculated the rates in a 387 persons society with assumption of contamination rate of % 50 and insurance level of %95 and error level of %0.05 of sample volume by the use of estimation of the rates formulation. Sampling was branching model with different steps. First we selected eight branches from different parts of the city. Then we appointed 50 families in each branch (except for one branch in which we appointed 37 families).

Then we appointed one person / each family who was elder than 15 years old and interviewed with him/her. The head of branches were selected according to the referring to Health & Therapeutic Centers at different parts of city. We started the number of studying families from a random number up to 50 families (8th branch includes 1 to 37). This is because of wide number of centers at civil parts and the same division of families between the stations in those centers.

The data were collected using a customized questionnaire including demographic questions and questions about facing of people with tobacco smoke (Cigarette and hookah smoke, Duration of exposure, Place of exposure, Reaction of exposure). We benefited from relevant resources and ideas of specialists. Scientific value of questionnaire was confirmed by content validity and its remaining with test – retest method on a 30-person sample of similar people with ideal society. All data were collected through personal interview with selected samples and by learned people and filling out a questionnaire. The respondents referred to health & therapeutic centers throughout the city and selected their considered head branch. Then after return back to their homes, we interviewed with them after introducing themselves and specifying the real goals of the research and then taking part in to the study and interview if they prefer so.

After data collection firstly we revised and control the questionnaires and analyzed the same after coding and entering them into the computer by the use of SPSS16 software. In order to explain

all data we used explanatory statistic indexes and abundance distribution tables and also data analysis and any further differences between men and women for facing with cigarette smoke.

RESULTS

A total of 387 persons were studied in this study (%44.4 were male and %55.6 were female). The average age of people was 33.5 years with a Standard deviation of 12.02 and changes scope from 15 to 74 years. From literacy point of view about %5.9 were illiterate and %20.7 had primary school certificate and %20.4 of them had average academic studies, %31.8 had high school diploma and %21.2 had university studies.

Most of male were employees (43%) and/or had free jobs (41%). Most female were house keeper (72%).

According to the results, it was revealed

that %98.4 of the samples were subjected to cigarette smoke and %93.5 of them were contaminated with hookah smoke (Table 1).

Fig. 1 shows the term of contamination with environmental cigarette smoke. About %12.7 of the samples were always in contact with cigarette smoke and %14.7 were most of the times in contact with cigarette smoke. Only %1.6 of the samples had no records of contamination with cigarette smoke. %43.2 of the study population had a contamination with tobacco smoke within the last week and at least for one day and %29.5 for 2-3 days in the week. (Fig. 1)

Table 2 shows possible contact places with cigarette and hookah smoke. Regarding the current information in this Table the most common place where the people are exposed to environmental cigarette smoke (%52.2) was public vehicles that followed by home (%31.3) and for hookah it was the most (%93.4) at home and then %17.1 at coffees

Table 1. Distribution of abundance for contamination with environmental smoke of cigarette & hookah

Type of tobacco Contamination situation	Cigarette		Hookah	
	Qty	Percentage	Qty	Percentage
Yes	381	98.4	362	93.5
No	6	1.6	25	6.5

Table 2. Contamination places with environmental cigarette & hookah smokes

Type of tobacco Contamination situation	Cigarette		Hookah	
	Qty	Percentage	Qty	Percentage
Home	121	31.3	181	39.4
Work place	77	19.9	12	3.3
Vehicles (Bus, Taxi,...)	202	52.2	--	--
Restaurants	49	12.7	42	11.5
Coffees	86	22.2	62	17.1

Table 3. Contamination conditions with environmental cigarette & hookah smokes according to the sex

Type of tobacco Contamination situation	Male				Female			
	Yes		No		Yes		No	
	Qty	Percentage	Qty	Percentage	Qty	Percentage	Qty	Percentage
Cigarette	171	99.4	1	0.6	210	97.7	5	2.3
Hookah	158	91.8	14	8.2	204	94.9	11	5.1

and %11.5 at restaurants. (Table 2)

This is to remind that a person may be contaminated in different places with cigarette / hookah smoke. Table 3 shows the level of contamination with environmental cigarette and

hookah based on the sexuality. According to the results of Fisher test there was not a significant statistic difference between contamination level in male and females with environmental cigarette and hookah smokes. (Table 3)

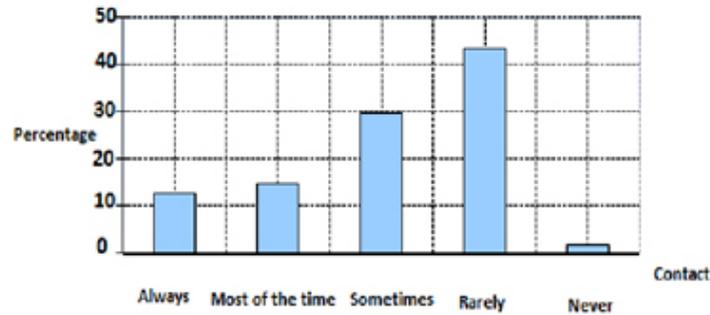


Fig. 1. Shows the term of contamination with environmental cigarette smoke

DISCUSSION

The main objective of this study was to determine contamination situation with two environments (Cigarette & Hookah) with persons over 15 years old at Bandar Abbas city. According to the findings it was revealed that %98.4 of the samples had been contaminated with cigarette smoke whereas %93.5 with environmental hookah smoke. About %12.7 of persons had always contaminated and %14.7 had most of the times contaminated with cigarette smoke. The results of a study at the U.S. showed that about %40 of children are living in a place with at least one smoker¹⁰. The results of the Del Aram's study with a goal of considering any relation between indirect breathing of cigarette smoke by moth and weight of the infant, it was revealed that %36.6 of pregnant women have been subject to breathing of environmental cigarette smoke¹². The results of a similar study in U.K show that %13.5 of pregnant women were subject to environmental smoke of cigarette¹³. Although the present study is somehow different with mentioned studies, any comparison of the results show the high level of contamination with environmental smoke of tobacco (Cigarette & hookah) in citizens of Bandar Abbas city. Therefore, is it necessary to train people about further effects and consequences out of environmental cigarette smoke.

Furthermore, the results of the present study show that %43.2 of the studies samples

had a contamination with environmental tobacco smoke at least one day in the week and %29.5 had contaminated with it about 2-3 days. Morovatti et.al made an investigation with the goal of finding any relation between contamination with cigarette smoke and health beliefs and social pressure of adolescence at Yazd city. The findings show that %43.8 of them were present in a room with a smoking person at least one day per last week which is in compliance with the present study¹⁴.

There is not any similar study in evaluation of cigarette and hookah exposure and its effect in order to compare with present study. Regarding the high level of contamination with hookah smoke in the present study and since it is common to use hookah in Middle East countries, especially at southern areas like our country, it is recommended to conduct more studies in this regard and provide direct / indirect effects of smoke resulted from hookah usage.

Public vehicles are the most rate places where people are subjected to cigarette smoke. Homes are the most common place of contamination with hookah smoke. The results of this study about the contamination place with cigarette are in accordance with the results of Morovati's study¹⁴. Most of the people that was considered in our study showed that the danger of hookah is lower than cigarette and believe that hookah smoke will be treated by passing the water. Therefore, it may be associated with lower health-risk for people in

comparison with cigarette smoke.

In fact hookah has changed into a hidden social problem. It has not an ugly situation because this study showed people that was considered in believed it has lower harms than cigarette. It seems that we can change the public attitude against this problem by training people about changing this belief that current water in hookah not only cannot protect and clarify smoke from burning tobacco but also it may increase pulmonary absorption.

Home is a place where most people are exposed to hookah smoke and public vehicles for cigarette. According to the report of World Health Organization about half of children in the world have different problems out of tobacco like asthma which may cause dangerous diseases⁴. Home is one of the most common places where children exposed to environmental tobacco smoke. Although in this study after public transportation, home has the most exposure place to environmental tobacco smoke however, the duration of exposure to environmental tobacco smoke at home are more than vehicles.

Therefore, public training and awareness of parents about harmful effects of tobacco smoke and prevention from tobacco usage in such places has a great role in reducing of any contact of family members, especially children with environmental smokes. According to the studies conducted in the U.S.¹⁵, Norway¹⁶, and Netherlands¹⁷, it is obvious that any reduction in contamination with environmental cigarette smoke at homes was the result of public awareness, especially parents.

Furthermore the obtained results of this study showed that there is not any significant statistical relation between contamination of people with tobacco smoke and their sexuality and the contamination rate is similar in both sexes. In a study conducted by Youshita Kakanita at Japan, it was revealed that there is a significant statistical correlation between cigarette smoke and sexuality of people. This correlation was in a manner that men had more contamination than women which is not in compliance with current study¹⁸. Also according to a study made in India, it was revealed that about %12.6 of women and %30.8 of men were subject to tobacco smoke¹⁹. This is a sign of lack of equal contamination of men and women with tobacco smoke at different regions of the world. It seems that some effective factors in this regard are lack of knowledge of people and incorrect

beliefs about tobacco smoke as well as presence of people in contaminated environments with tobacco smoke.

Today any contact with smokers is not a simple matter because not only may cause bad smell of the clothes and hairs or further dangers for the eyes but also it caused they have made different rules for smokers in rejection of smoking at covered places and/or public vehicles. By approving this law shows the importance of the subject. But in spite of all efforts and according to the results of this study the contamination rate with cigarette and hookah smoke is really high in our society. It is inevitable to increase knowledge level of people about the disadvantages of tobacco breath and more serious attention to making a law for prohibition of tobacco usage at public places.

For this purpose it is necessary to provide complete information about disadvantages of tobacco usage as well as presence in contaminated places with tobacco smoke and future consequences in an effective method under an appropriate framework of social training especially for the groups with higher chances of contamination.

One of the limitations of this study is investigation the matter only for the population over 15 years old without any further information about situation of children and youth with cigarette and hookah smoke. Therefore, it is recommended to have special studies about fragile situation of this group due to any contacts with tobacco smoke.

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