# Tobacco Smoking Habit Among the Employees in Health Institutions

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**SUMMARY**
The prevalence of tobacco consummation in Bosnia and Herzegovina is among highest levels in Europe: 49.3% of adult males and 35.1% of women are current smokers that are every other adult male and every third woman. In order to get a more complete picture of the prevalence of smoking among the health institutions employers and their compliance to the provisions of the law regarding the smoking ban in these institutions, the Institute of Public Health of the Medical Faculty in Sarajevo has conducted a survey on this problem in the area of the Sarajevo Canton. 660 employers of seven health institutions have been surveyed, of which 158 (23.9%) from the Medical Centre of the Sarajevo Canton, 123 (18.6%) from the "Prim. Dr. Abdulah Nakas" General Hospital, 112 (17. 0%) from the Institute for Urgent Medical Help, 85 (12.9%) from the Institute for Public Health of the Sarajevo Canton, 72 (10.9%) from the Institute for the Health Care of Women and Motherhood, 57 (8.6%) from the pharmacies of Sarajevo, and 53 (8.0%) from the Institute for Alcoholism and Substance Abuse. The largest number of smokers is among medical technicians (55.4%), technical staff (56.7%), and administrative staff (51.4%). Approximately 34.0% of medical doctors and specialists and 25.0% of graduate pharmacists are current smokers. The results of the survey indicate the prevalence of smoking among health employers. Law regulations on allowable smoking in special smoking areas are mostly not observed and therefore the largest numbers of employers (approximately three-fourths of them) is exposed to tobacco smoke in their workplaces. A significant number of medical technicians do not identify themselves as models of behavior for their patients. Therefore it is necessary to conduct the education of medical staff on the need to change their own behavior in order to contribute to reducing the number of patients smoking by providing an example, thereby improving their own health status.

**Keywords: health institutions, employers, smoking, tobacco smoke exposure, law regulations**

## 1. INTRODUCTION

Regional distribution of tobacco use in Bosnia and Herzegovina is among the highest in Europe: 49.3% of adult men and 35.1% of women are daily smokers, or every second adult man and every third woman.

Key role in the activities and measures for the establishment of tobacco control should have medical facilities and health workers. Unfortunately, the number of smokers among health care workers is extremely high and follows the number of smokers in the overall population of our country (1, 2, 3).

The Framework Convention on Tobacco Control provides programs for the creation of health facilities without cigarette smoke (smoke-free hospital). Law on Restricted Use of Tobacco Products Federation prohibits tobacco smoking in health facilities other than the premises for the purposes of smoking (Article 3).

European countries before the introduction of smoke-free health care institutions have a large number of smokers among health personnel compared to the U.S. Then in Denmark were about 32% of health workers who smoke, in Italy hospitals 39% of doctor's smoke, and 44% of health personnel, in Spanish hospitals smoke 47% of nurses, and in French hospitals over 42% of nurses (4).

## 2. GOAL

The goal was to investigate the extent of smoking among health workers and other employees of medical institutions and their views about respect for the Law on limited use of tobacco products in health care facilities in the Canton Sarajevo

## 3. METHODOLOGY

The study included employees of the hospitals, outpatient and public health institutions of the Sarajevo Canton (General Hospital, "Prim. Dr. Abdulah Nakas" Sarajevo, Institute for Alcoholism and Substance Abuse of Canton Sarajevo; Primary Health Care Center Sarajevo, Institute for Emergency Medical Assistance of Canton Sarajevo; Institute for Women's Health and Maternity of Canton Sarajevo; Department of Public Health of Canton Sarajevo; Pharmacies Sarajevo).

Research instrument was an anonymous survey questionnaire to test smoking habits, exposure to passive smoking and opinion of employees about smoking in health institutions. Modified questionnaire was used to study smoking behavior of medical staff in European

hospitals (Network European smoke-free hospital–ENSH–questionnaire). Descriptive analysis included the responses to make comparison of the smoker status, gender, age, occupation and health care institution. Smoker status was observed as: daily smoker, former smoker and nonsmoker.

## 4. RESULTS

*Characteristics of respondents*: Survey included 660 employees of 7 health facilities in Canton Sarajevo, of which 158 (23.9%) from Primary Health Care, 123 (18.6%) from General Hospital, 112 (17.0%) from the Institute of urgent medical assistance, 85 (12.9 %) from the Institute of Public Health, 72 (10.9%) from the Institute for Women's Health and Maternity, 57 (8.6%) from Pharmacies, 53 (8.0%) from the Institute for Alcoholism and Substance Abuse. In the sample most represented were medical technicians and nurses (60.6%), and 24.1% medical doctors, masters of pharmacy 4.8%, 9.1% of technical staff and administrative staff in 5.6%. Gender structure of respondents reflects the state of employment in health care institutions, namely 72.4% of respondents were female.

| Current smoking status | Number | Percent |
|---|---|---|
| Smoker | 314 | 47.6 |
| Non-smoker | 288 | 43.6 |
| Ex smoker | 56 | 8.5 |
| No reply | 2 | 0.3 |
| Total | 660 | 100.0 |

*Table 1. Current smoking status*

The largest number of respondents belonged to the age group 40-59 years (62.8%), while people younger than 39 years were present in 28.3%.

According to current smoker status 47.6% are smokers, 43.6% non-smokers and 8.5% ex-smokers (Table 1). Among women 49.4% are smokers (6.1% former smokers ;), and males 44.5% are smokers (15.6% former smokers).

Largest number of smokers was among nurses-technicians (55.4%) and technical staff (56.7%), and not to behind is administrative personnel (51.4%). Medical doctors and specialists are smokers in 34.0%, 25.0% of staff with master's degree in pharmacy (Table 2).

Average weekly exposure to passive smoking in the workplace of the respondents is about 4 days with 4 hours per day (Table 3).

*Medical staff relationship to smoking on the premises of health facilities*: The existence of a conflict of interest of smokers and non-smoker is present among all generations of employees, but in a small scale. It is mostly present among the oldest respondents (36.7%) and the differences were statistically significant (p=0.069) (Table 4). Mainly non-smokers knowingly accept exposure to tobacco smoke in the workplace (61.3%).

The least complaints to the presence of cigarette smoke in health care facilities was by non medical staff, and most among the doctors (25.2%) (Table 5). Differences in responses by type of occupation were statistically significant (p <0.015).

According to opinion of 81.3% pharmacists, 67.9% doctors and only 55.6% of nurses–technicians, health workers should be non-smoker who needs to be a role model for patients to follow (Table 6).

Differences in attitudes among health care workers were statistically significant (p = 0.002).

## 5. DISCUSSION

Today it is considered that cigarette smoking is a major risk of many diseases and a leading risk factor for death in most chronic diseases (4). Reduction of illness and death outcomes is possible prevention measures to prevent and eliminate smoking in the population. Leading role in the prevention and education about smoking cessation is on health workers of all profiles.

In our study 46% of employees are smoking in health institutions, of which the lowest number are doctors (34%) and pharmacists (25%). The obtained results of our study are similar to results obtained in other surveys in the world in terms of determining representation smoker's habit among employees of health institutions. High incidence of smoking among health workers was observed in

| | | No reply | Smoker | Ex-smoker | Smoker | Total |
|---|---|---|---|---|---|---|
| No reply | Number % | 1 14.3 | 3 42.9 | 0 0 | 3 42.9 | 7 100.0 |
| Administration staff | Number % | 0 0 | 24 40.0 | 2 3.3 | 34 56.7 | 60 100.0 |
| Technical staff | Number % | 0 0 | 16 43.2 | 2 5.4 | 19 51.4 | 37 100.0 |
| Physician or specialist | Number % | 0 0 | 82 51.6 | 23 14.5 | 54 34.0 | 159 100.0 |
| Nurses | Number % | 1 3.0 | 123 36.8 | 25 7.5 | 185 55.4 | 334 100.0 |
| Pharmacist | Number % | 0 0 | 22 68.8 | 2 6.3 | 8 25.0 | 32 100.0 |
| Other | Number % | 0 0 | 23 67.6 | 3 8.8 | 8 23.5 | 34 100.0 |
| Total | Number % | 2 3.0 | 288 43.6 | 56 8.5 | 314 47.6 | 660 100.0 |
| | % of total | 3.0 | 43.6 | 8.5 | 47.6 | 100.0 |

*Table 2. Current smoking status according to profession*

| | Exposure days per week | Exposure hours per day |
|---|---|---|
| No. or respondents | 660 | 659 |
| Mean | 3.81 | 4.04 |
| Std. deviation | 2.961 | 5.267 |

*Table 3. Weekly and daily exposure to passive smoking in health institution*

| Age group | In your health institution exist conflict of interest between smokers and non-smokers | | | |
|---|---|---|---|---|
| | No reply | Yes | No | Total |
| No reply number % | 3 33.3 | 2 22.2 | 4 44.4 | 9 100.0 |
| 20-29 number % | 1 1.9 | 16 30.2 | 36 67.9 | 53 100.0 |
| 30-39 number % | 6 4.5 | 39 29.1 | 89 66.4 | 134 100.0 |
| 40-49 number % | 20 9.6 | 60 28.7 | 129 61.7 | 209 100.0 |
| 50-59 number % | 13 5.9 | 63 30.7 | 130 63.4 | 206 100.0 |
| 60-65 number % | 3 6.1 | 18 36.7 | 28 57.1 | 49 100.0 |
| Total number % | 46 6.9 | 198 30.0 | 416 63.1 | 660 100.0 |

*Table 4. Opinion about existing conflict of interest between smokers and non-smokers in health institution according to age*

| You complaint about exposure to passive smoking at workplace | | | | | |
|---|---|---|---|---|---|
| Profession | number % | No reply | Yes | No | Total |
| No reply | number % | 2 28.6 | 1 14.3 | 4 57.1 | 7 100.0 |
| Administration staff | number % | 21 35.0 | 7 11.7 | 32 53.3 | 60 100.0 |
| Technical staff | number % | 12 33.3 | 4 11.1 | 20 55.6 | 36 100.0 |
| Physician or specialist | number % | 29 18.2 | 40 25.2 | 90 56.6 | 159 100.0 |
| Nurses | number % | 72 21.2 | 51 15.0 | 217 63.8 | 340 100.0 |
| Pharmacist | number % | 7 21.9 | 2 6.3 | 23 71.9 | 32 100.0 |
| Other | number % | 2 7.7 | 4 15.4 | 20 76.9 | 26 100.0 |
| Total | number % | 145 22.0 | 109 16.5 | 406 61.5 | 660 100.0 |
| | % from total | 22.0 | 16.5 | 61.5 | 100.0 |

***Table 5. Employee complaints about presence of tobacco smoke in health institutions according to profession***

developing countries, in Turkey, about 52% in Rumania 42.3%, while in other EU countries it is below 25% and tends to decline. (5, 6, 7, 8, 9, 10, 11).

| As non-smoker you are the role model for patient to follow | | | | | |
|---|---|---|---|---|---|
| | | No reply | Yes | No | Total |
| Physician or specialist | Number | 28 | 108 | 23 | 159 |
| | % of total | 17.6 | 67.9 | 14.5 | 100.0 |
| | | 4.2 | 16.4 | 3.5 | 24.1 |
| Nurse | Number | 75 | 189 | 76 | 340 |
| | % of total | 22.1 | 55.6 | 22.4 | 100.0 |
| | | 11.4 | 28.6 | 11.5 | 51.5 |
| Pharmacist | Number | 2 | 26 | 4 | 32 |
| | % of total | 6.3 | 81.3 | 12.5 | 100.0 |
| | | 0.3 | 3.9 | 0.6 | 4.8 |
| Total | Number | 131 | 384 | 145 | 660 |
| | % of total | 19.8 | 58.2 | 22.0 | 100.0 |

***Table 6. Health worker – non-smoker-role model for patient***

Extremely low frequency is present in the United States, Australia and England (2-5%). The causes of this high incidence of smoking in our country are in fact that smoking is generally accepted as cultural behavior in the general population and among health care workers (4, 11). On the other hand, the different circumstances associated with the profession of health care workers, such as stressful situations at work (emergencies, working at night), type of specialty (psychiatrist), and need for continuous education to make smoking becomes a habit of making it easier and acceptable (10, 13). In addition, a significant number of health workers, especially among the nurses do not understand smoking addiction as a disease that needs to be treated. Although they possess knowledge about the harmful effects tobacco smoke, a significant number of health workers do not consider smoking causes large number of diseases. High prevalence of smoking among health workers in Sarajevo contribute also social, economic and health consequences of past war, which spared neither one employed in health institutions.

The Role of medical workers in the implementation of strategies to prevent and fight against the smoking id of essential importance. High incidence of smoking by health professionals increases the repulsive attitude towards smoking cessation in their patients. Own model of non-smokers doctor gives the best results in persuading patients to stop smoking (14). Alarming data from our study is that 23% of nurses and 15% of doctors do not see themselves as a role model for patients to stop smoking. High incidence of smoking among health workers imposes the need for pharmacological and other assistance in their process of giving up smoking, which is particularly true of nurses (15, 16). In this manner the health workers non-smokers/ex-smokers can make a significant contribution to creating anti smoking campaigns and creating space without the cigarette smoke.

## 6. CONCLUSION

The study was conducted in seven medical institutions of different levels and content of health care services in the area of Canton Sarajevo. Surveyed are 660 employees, of whom 50% were smokers.

Among health workers the lowest number of smokers was among doctors (34%) and pharmacists (25%).

Percentage share of smokers among medical staff is smallest among doctors in all medical institutions, which corresponds to the results of similar study undertaken in the world. However, the percentage of our doctors smokers was significantly higher compared to the percentage of physician smokers in the world.

Nurses/technicians are most represented among smokers. Over 55.0% of nurses smoke, which is significantly higher than the results obtained in surveys conducted in European hospitals. Over 50% of the administrative and technical staff is smokers. Most of the smokers in European hospitals are in this category of employees.

A significant number of nurses do not recognize themselves as a model for behavior of their patients. Legislative is generally not respected and therefore the largest number of employees (about 3/4) is exposed to tobacco smoke at the workplace.

Given the present trends in the world, leading the creation of smoke-free health care institutions with a complete ban on smoking that have contributed to reducing the number of smokers of their employee's personnel we should follow their experiences in order to achieve similar results.

## REFERENCES

1. Nikšić D. Kurspahić Mujčić A. Na putu ka zajednici bez duhanskog dima. Ministarstvo zdravstva kantona Sarajevo, Meligraf dd., 2008: 14-48.
2. WHO. Report on the global tabaco epidemic. 2008.
3. Nikšić D, Kurspahić Mujčić A.Nikšić H, Dzubur, Valjevac A. Exposureto tobacco smoke in correlationto attitudesto smoking of both smokers and non smokers. Folia medica, 2008; 43(2): 49-55.
4. European Commission. Tobacco or health in the EU: paste, present and future. 2004. Luxembourg,Office of Official publications of the European Communities, 2004. http://www.ec.europa.eu/health/ph determinants/life style/ Tobacco /Documents/ fr.eu.pdf NIDA
5. European network for Smoke-free-hospital ENSH, Epidemiology of smoking in HCW 1996.
6. Vagropoulos I, TsilchorozidouT, Tsinopoulos G, Salonikidou Z, Mouratova M. Smoking habits among the hospital staff of a general hospital

in northern Greece: a long way for smoke-free hospital. Monaldi Arch Chest Dis, 2006; 65 (3): 160-4.
7. Sotiropoulos A, Gikas A, Spanou E, Dimitrelos D, Karakostas F, Skliros E. Smoking habits and associated factors among Greek physicians. Public Health, 2007; 5 (Suppl): 333-40.
8. Smith DR, Lagget PA. An international review of tobacco smoking in the medical profession: 1974-2004. BMC Public Health, 2007; 7: 115. http:// www.biomedcentral.com/1471-2458/7/115
9. Versano S, Hevion G, Garenkin M. Smoking by an israeli general hospital staff, and attitude to smoking in hospitals. Are we in Israel ready to institute „smoke –free hospitals"? Harefuah 2000; 138(Suppl 4): 335-40. http://www.pubmed.gov
10. Martinović Ž, Martinović C, Čuturić M. Učestalost pušenja i nikotinska ovisnost kod medicinskih radnika. Med Glas, 2009; 6(2): 211-7.
11. Bozicevic I, Gilmore A, Oreskovic S. The tobacco epidemic in South-East Europe: concequences and policy responses. Economics of tobacco control paper N° 8. Health, Nutrition and Population (NHP) Discussion Paper. World Bank. Washington, 2004. (http://www.worldbank.org/ tobacco
12. Derek R, Smith Y, Adachi M, Mihashi M. et all. Tobacco smoking habits among a cross-section of rural japanese nurses.Australian Journal of Advanced Nursing, 2006; 24 (2): 2-6.
13. McKenn H, Slater P, McCance T, Bunting B, Spiers A. and McElwee G. The role of stress, peer influence and education levels on the smoking behaviour of nurses. International Journal of Nursing Studies, 2003; 40(4): 359-66.
14. Hodgets G, Broers T, Godwin M. Smoking behaviour, knowledge and attitudes among Familiy Medicine physicians and nurses in Bosnia and Herzegovina. BMC Fam Pract, 2004; 5: 12.
15. Torres Lana A, Cabrera de León A, Garcia MT, Jaime GA. Smoking and sickness absence among public health workers. PublicHealth, 2005; 119(2): 144-9.
16. Willaing I, Jørgensen T, Iversen L. How does individual smoking. Behaviour among hospital staff influence their knowledge of the health consequences of smoking? Scandinavian Journal of Public Health, 2003; 31(2): 149-55.

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