

Environmental Tobacco Smoke as Risk Factor in School Children in the Federation of Bosnia and Herzegovina

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ABSTRACT

Introduction : Exposure to environmental tobacco smoke (ETS) is defined as a human cancerogen class A, due daily exposure is responsible for health hazards consider as almost equal as smoking of tobacco. **Goal :** Monitoring of exposure of school children to ETS as indicator of enforcement of ban of smoking in public places as tobacco control measure in the Federation of BiH. **Methods:** Analysis of surveys findings performed in the Federation of BiH in period 2008-2013, with particular focus on ETS exposure in school children. **Results:** A survey findings indicates decrease of exposure to ETS in school children at home from 79.0% in 2008 to 62.1% in 2013, as well decrease of exposure to ETS in public places from 85.0% in 2008 to 59.8% in 2013. However, 65.8% of school children in the Federation of BiH are daily exposed to ETS in school premises and only 54.6% of school children have been taught in school about health consequences of tobacco smoke. Over three quarter of school children or 80.1% are in favor of ban of smoking in public places. **Conclusions :** Exposure to ETS in school children considers as significant evidence for more efficient enforcement of tobacco control legislation in the Federation of BiH.

Key words : ETS, school children, Federation of BiH.

1. INTRODUCTION

Almost six million people each year all over the world die because of tobacco related smoking as well exposure to tobacco or other's smoke is significant health hazard. (1, 2). Significant part of children and youth are daily exposed to environmental tobacco smoke, which influence on their health and increases risk of tobacco related diseases. (3, 4, 5, 6, 7, 8, 9). However, tobacco is still the most preventable cause of death which could be successfully reduced by comprehensive tobacco control measures. (10, 11, 12) The World Health Organization enforced a set of relevant international documents, aimed to support member states in development of national tobacco control interventions. In 2005, entered into force Framework Convention on Tobacco Control which underlines need of protection from smoke exposure. (13). In 2008, WHO developed a "MPOWER", as set of tobacco control measures (14) and further a health policy framework, Health 2020 aimed to reduce tobacco related illness, disability and death (15).

Legislation framework of tobacco control measures in the Federation of BiH is contained in national Tobacco Control Law adopted in 2011, which ban smoking in public places, schools, health institutions and public transport vehicles. (16)

Most part of national tobacco control measures developed based on a document of Tobacco Control Strategy in the Federation of Bosnia and Herzegovina 2003. (17) In 2013, Federal Ministry of Health initiated a new Tobacco Control Strategy drafted in line with WHO Framework Convention of Tobacco Control (18) Smoking is leading addiction disease in schoolchildren and youth in the Federation of BiH. Relevant survey findings indicate early start of tobacco use, with significant increase of smoking prevalence in one grade of secondary schools compare to enrolled grades of primary school (19).

2. GOAL

Analysis of exposure to environmental tobacco smoke in school children as a significant indicator for evaluation of tobacco control law enforcement in the Federation of BiH as well evidence base for recommendations of policy and strategy measures.

3. MATERIALS AND METHODS

The analysis involves data collected through two surveys conducted in the Federation of BiH, during period 2008 -2013 under support of the Federal Ministry of Health and Federal Ministry of Education who authorized the survey. Survey is conducted by the Institute for Public

Health of the Federation of BiH as the implementing agency. (19)

For the analysis purpose, exposure to environmental tobacco smoke in school children assessed as a part of multiple-choice questionnaire adapted from a Global youth tobacco standard core questionnaire. Surveys involves two-stage cluster sample design aimed to enroll students in grades 7, 8 and 9th of primary and 1th grade of secondary school, with focus on representative sample of children age 13-15. In 2013, from 6,972-sampled schoolchildren, total 6,415 completed usable questionnaires, of which 5,060 were aged 13-15 years with overall response rate of schoolchildren 92, 0%.

Data entry and statistical analysis completed with SUDAAN, a software package used to calculate weighted prevalence estimates and standard errors (SE) of the estimates (95% confidence intervals [CI] were calculated from the SEs).

4. RESULTS

Exposure to environmental tobacco smoke (ETS) at home decreases from over three quarter (79.0%) in 2008 to 62.6% of school children in 2013 who confirmed an everyday exposure to smoke, while 65.1% schoolchildren in 2013 confirmed exposure to ETS in all school premises without any difference in sex. (Table 1). A survey finding shows significant decrease of exposure of school children to ETS in enclosed public places, from 85.0% in 2008 to 60.7% in 2013. (Figure 1).

Related to significant role of school in development of knowledge, attitude, behavior and health promotion

Place of exposure	Total		Boys		Girls	
	2008	2013	2008	2013	2008	2013
Exposed to tobacco smoke at home	79.0% 95% CI (76.9-81.0)	62.6% 95% CI (60.2-65.1)	76.1% 95% CI (73.9-78.2)	62.1% 95% CI (59.1-64.9)	81.7% 95% CI (79.2-83.9)	63.3% 95% CI (60.3-66.2)
Exposed to tobacco smoke inside any enclosed public place*	85.0% 95% CI (83.1-86.8)	60.7% 95% CI (56.5-64.9)	83.5% 95% CI (81.3-85.4)	59.8% 95% CI (55.0-64.4)	86.4% 95% CI (84.4-88.2)	61.8% 95% CI (57.3-66.1)
Exposed to tobacco smoke at any outdoor public place	NA	58.9% 95% CI (55.6-62.1)	NA	59.6% 95% CI (55.7-63.5)	NA	58.1% 95% CI (54.9-61.2)
Saw anyone smoking inside the school building or outside on school property	NA	65.1% 95% CI (59.6-70.3)	NA	65.8% 95% CI (59.9-71.3)	NA	64.4% 95% CI (58.2-70.1)

Table 1: Exposure to environmental tobacco smoke in school children age 13-15, Federation of BiH 2008-2013. * All public places for 2008. equal to enclosed public places for 2013.

Attitude	Total		Boys		Girls	
	2008	2013	2008	2013	2008	2013
Definitely thought other people's tobacco smoke is harmful to them	64.6% 95% CI (62.6-68.6)	69.9% 95% CI (67.4-72.3)	63.4% 95% CI (60.8-65.9)	67.3% 95% CI (64.9-69.7)	65.8% 95% CI (62.9-68.5)	72.7% 95% CI (69.6-75.6)
Favored banning smoking inside enclosed public places*	86.6% 95% CI (84.5-88.4)	80.1% 95% CI (78.2-81.8)	84.9% 95% CI (82.3-87.1)	76.4% 95% CI (73.0-79.4)	88.2% 95% CI (85.8-90.4)	84.1% 95% CI (82.1-86.0)
Favored banning smoking at outdoor public places	NA	55.9% 95% CI (53.3-58.4)	NA	55.2% 95% CI (51.4-58.9)	NA	56.7% 95% CI (53.9-59.4)

Table 2-Knowledge and attitudes towards environmental tobacco smoke among school children age 13-15, Federation of BiH 2008-2013. * All public places for 2008. equal to enclosed public places for 2013.

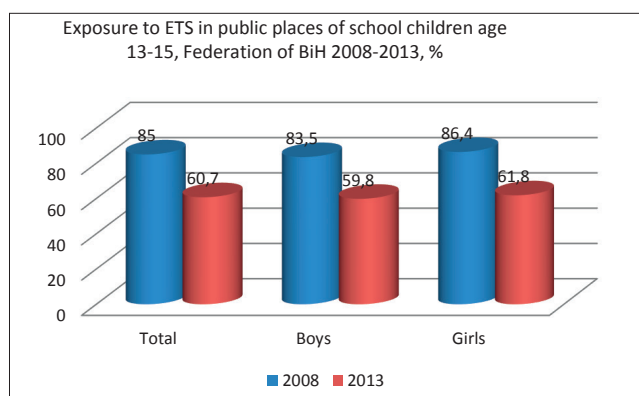


Figure 1-Exposed to tobacco smoke in public place in school children age 13-15 in the Federation of BiH 2008-2013

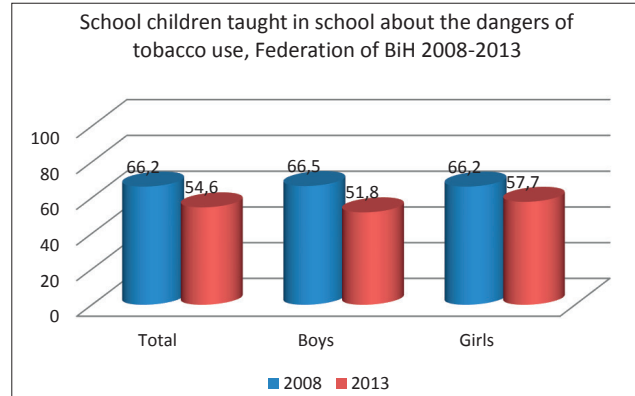


Figure 2-School children taught in school about the dangers of tobacco use, Federation of BiH 2008-2013

Knowledge that other people's tobacco smoke is harmful to them increases from 64.6% in 2008 to 69.9% of school children in 2013, who definitely think other's people tobacco smoke is harmful to their health, more likely girls (72.7%) than boys (67.3%). However, a survey finding shows some changes in school children attitude related ban of smoking in public places. From over three quarter or 86.6% school children in 2008 who were in favor of banning smoking in enclosed public places, decreases to 80.1% of school children in 2013, both boys and girls. (Table 2)

5. DISCUSSION

A survey finding shows that exposure to environmental tobacco smoke is significant health risk factor for school children and youth in the Federation of BiH. Exposure to ETS at home decrease from 79.0% to 62.1%, (19). which is related to recently survey results on high smoking prevalence in adults in the Federation of BiH (20). A exposure to ETS in school children at public places decreases from 85.0% in 2008 to 59.8% in 2013. Collected results of surveys performed in the Federation of BiH compare to neighboring countries shows that exposure to ETS at home and public places is lower compare to Croatia (66.9% at home, 67.9% at places outside their home), Serbia (76.9% at home, 71.9% at places outside their home), and higher compare to Slovenia (41.3% at home, 23.4% at places outside their home), Czech Republic (43.0% at home, 45.8% at places outside their home), Italy (48.5% at home, 79.3% at places outside their home), Hungary (43.0% at home, 72.6% at places outside their home)(21,22).

A survey results indicates an decreases of involvement of tobacco prevention in school curriculum, from 66.2% in 2008 to 51.8% in 2013, which is lower compare to surveys results in neighboring countries such as Croatia (63.3%), Serbia (58.0%), Slovenia (65.3%), Czech Republic (64.4%), Italy (59.1%), and Hungary (57.2%) of school children had been taught about health hazard of tobacco in class during the past year. However, there are some changes in school children knowledge and attitude related tobacco in period 2008-2013. A knowledge of harmful effects of exposure of other tobacco smoke among schoolchildren increases from 64.6% in 2008 to 67.3% in 2013, which is similar to other countries Macedonia (67.4%), Croatia (64.1%), Serbia (65.0%), and higher compare to Slovenia (60.2%), Czech Republic (63.0%), Italy (61.6%) and Hungary (61.5%) (20, 21)

6. CONCLUSION

Collected data confirmed decreases of exposure to environmental tobacco smoke in schoolchildren in the Federation of BiH, in period 2008-2013 as a significant indicator for more effective enforcement of tobacco control law by Federal Ministry of Health. However, survey findings indicates that significant part of school children are still daily expose to ETS in all public places, as evidence for more effective enforcement of ban of smoking on public places. Promotion of schools as healthy life style environments should be an significant part of tobacco control measures in line with international good practice. In aim to promote awareness and knowledge of school children related to tobacco, there is need for more comprehensive

public campaigns as well enrollment of smoking prevention and cessation as a part of curriculum of primary and secondary schools in the Federation of BiH. (22,23)

CONFLICT OF INTEREST: NONE DECLARED.

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