THE EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE AND ATTITUDES TOWARDS TOBACCO CONTROL MEASURES – A COMPARISON OF 5 EUROPEAN COUNTRIES

Jochen R. Thyrian[1,2], Demosthenes B. Panagiotakos[3], Evangelos Polychronopoulos[3], Marc C. Willemsen[4], Witold Zatoński[5], Ulrich John[6]

[1]Institute of Community Medicine, Department of Community Health, University of Greifswald, Germany
[2]Department of Pediatrics, University Children Hospital Greifswald, Germany
[3]Harokopio University, Athens, Greece
[4]STIVORO, the Netherlands
[5]Epidemiological and Cancer Prevention Unit, Oncological Center Warsaw, Poland
[6]Institute of Epidemiology and Social Medicine, University of Greifswald, Germany

SUMMARY

Objectives: (a) to examine exposure to ETS in 5 European countries that differ in their tobacco control (TC) activity, (b) to examine attitudes towards TC measures and (c) to relate these results to sociodemographic and smoking related variables.

Methods: population-based, representative sample of n=3,500 participants age 16–59, in Germany, Greece, Poland, Sweden, UK.

Results: most never smokers are exposed to ETS in leisure time (55.74%); chances of being exposed to ETS at home or outside of the home are dependent on sex, smoking status, country, whether there are smokers in the households, what the status of the relationship is (single vs. not single); results differ significantly between countries.

Conclusion: smoking restrictions are associated with lower levels of actual exposure to ETS. non-smokers want governmental regulation.

Key words: tobacco, tobacco control, environmental tobacco smoke

Address for correspondence: J. R. Thyrian, Institute for Community Medicine, Ellernholzstr. 1-2, 17489 Greifswald, Germany.
E-mail: thyrian@uni-greifswald.de

INTRODUCTION

The health effects of exposure to Environmental Tobacco Smoke (ETS) are well known (1) and tobacco control (TC) measures to reduce exposure are widely discussed. To estimate the magnitude of the problem and whether TC measures work, there is the need to examine exposure to ETS in the population. Implementing TC measures is dependent on a population´s support and this support is individually dependent on psychosocial and policy-specific variables (2). There are considerable differences between countries how well and comprehensive measures are implemented (3).

Support is dependent on socio-demographic and smoking behaviour related variables. Restricting smoking in specific locations is supported by the majority of smokers and non-smokers (4) with smokers being less likely to support bans on smoking (4, 5). A study on subgroups in the US found differential support for policy interventions being dependent on demographic variables like age, gender, education and race (support is higher among older, female, higher educated and white respondents) (6) and smoking-related variables (support is higher with stronger beliefs about passive smoking being harmful and lower average cigarette consumption) (7). In adolescence policy support is significantly associated with psychosocial tobacco-related variables (e.g. perceived consequences of smoking, friends‘ smoking, perceived access to cigarettes, prevalence estimates of smoking among peers, cigarette offers and cigarette refusal self-efficacy) (8). However, to our knowledge none of these studies has related exposure to ETS to these variables in a population based sample of non-smokers and smokers.

Support is dependent on environmental variables. The International Tobacco Control Policy Evaluation Project (ITC Project), whose objective is to measure the psychosocial and behavioural impact of key policies of the Framework Convention on Tobacco Control (FCTC) in 9 different countries revealed that support for bans in both restaurants and bars is related to the existence of bans and that having smoke-free homes is related to household factors such as having a child, particularly a young child, and sharing the household with other non-smoking adults (7). But also smoke-free public places seem to stimulate adoption of smoke-free homes (9) supporting a social diffusion model for smoking restrictions.

While these studies have been conducted mainly in the US, the UK, Australia, and Canada, there is the need to examine exposure to ETS and attitudes towards TC across the European Union.

Even though there are regulations on the level of the European Union there are considerable differences in TC activity among the members of the EU. One study has identified 3 large clusters of European countries with the UK being in the cluster with a high amount of TC activity, Sweden and Poland being examples of medium TC activity and Germany and Greece being examples of low TC activity (3). Another study found similar results with Sweden and the UK being high in TC and Germany and Greece representing the lower end (5). However, these findings are about TC activity, but are not related to exposure to ETS or attitudes towards TC in the population. Population-based data is needed to find out whether countries high in TC activity also differ in actual exposure and whether the population in these countries have a more positive attitude towards these measures.

Therefore the objectives of this study are: (a) to examine exposure to ETS in 5 different European countries that differ in their TC activity, (b) to examine attitudes towards TC measures in these countries and (c) to relate these results to sociodemographic and smoking related variables.

METHODS

Sample

This analysis is part of the project "European Survey on Tobacco Control Attitudes and Knowledge (ESTA)", a population-based, representative survey of n= 3,500 participants age 16–59, in 5 different European countries (Germany, Greece, Poland, Sweden, UK) which was conducted between January and April 2006. The countries were chosen to represent countries with very low (Germany, Greece), medium (Poland) and high (Sweden, UK) activity in TC (3, 5). The survey was conducted via telephone. A representative household sample was drawn in each country and the target person was identified using the "last birthday method". The sample was stratified for smoking status to compare smokers and non-smokers with equal sized groups. The total retention rate was 56% (Germany 55%, Greece 80%, Poland 72%, Sweden 79%, UK 52%). A total of n=3,500 interviews were conducted (700 per country).

Data Assessment

Participants were asked for socio-demographic variables (age, sex, living in a relationship like marriage or others or if not living single) and smoking related variables (smoking status, urge to smoke and exposure to passive smoke, motivation to change). Smoking status was assessed asking "Have you smoked cigarettes in the last six months?" with the response pattern (a) at least one cigarette per day for daily smokers, (b) occasionally for occasional smokers and (c) no, no cigarettes for non-smokers. To further confirm the status we asked "And is this the status today?" with people indicating "no" being categorized as quitters. Socio-demographic and smoking-related variables are given per country and by smoking status in Table 1.

Exposure to ETS was assessed asking "Have you been exposed to smoke from other people smoking in the last 6 months?" with a multiple choice response format and the categories "yes, at home", "yes, at work", "yes, in my leisure time" and "no". For further statistical analysis exposure to ETS was categorized in three categories (a) no, (b) yes, at home and (c) yes, but not at home. The category (c) includes all respondents that indicated exposure at work and in leisure time, but not at home. Smokers were not asked this question.

Attitudes towards TC to decrease exposure to ETS were measured using 6 items that asked for smoking bans in different settings. Additionally participants were asked about their belief of the harmfulness of passive smoking (4 items) and their support of governmental regulations of smoking (4 items for pro- and 4 for anti-governmental regulations). Response pattern ranges from 1 = "absolutely agree" to 5 = "absolutely disagree". The questionnaire has been validated and has shown good internal consistencies (10, 11): belief about the harmfulness of smoking, Cronbach's $\alpha = 0.85$; anti-governmental regulation: Cronbach's $\alpha = 0.87$, pro-governmental regulation: Cronbach's $\alpha = 0.75$. Items and subscales are shown in Table 4.

STATISTICAL ANALYSIS

Using age as continuous variable, sex, status of relationship, smoking household, smoking status and country as categorical, predictive variables a multinomial regression was calculated to predict exposure to ETS. Each variable was then included in a separate multinomial regression analysis to detect differences between the three groups. The reference group was "no exposure to ETS". To examine the relation between agreement to TC measures and exposure to ETS univariate analyses of variance were calculated for each subscale of the attitudes towards TC measures. Independent variables were: exposure to ETS and country. Sex, age, status of relationship, smoking household were included as covariates. Post-hoc analyses with bi-variate comparisons of the independent variables were conducted.

Results

The exposure to ETS differs between countries and smoking status of the respondent. In Sweden 57.92% of never smokers are not exposed to ETS, while this is only 15.57% in Greece. The most never smokers are exposed to ETS in leisure time (55.74%) with differences between the countries ranging from 34.39% in Sweden to 64.34% in Greece. The exposure to ETS for never smokers at home is low (17.18%) and a little bit higher at work. For ex-smokers the frequencies of being exposed are similar to those of the never smokers. The exposure to ETS at home of occasional smokers is higher than for non-smokers in Sweden and the UK. Most occasional smokers are exposed to ETS in their leisure time (between 58.73% in Poland, to 88.46% in the UK). Comparing the nations the majority of respondents in Germany, Greece, Poland and the UK are exposed to ETS in their leisure time, in Sweden the majority is not exposed to ETS at all (54.36%). Exposure at work is low in Sweden and the UK. The detailed results of the exposure to ETS divided by country, smoking status and place of exposure are given in Table 2.

The chances of being exposed to ETS at home or outside of the home are dependent on age, sex, partly smoking status, whether there are smokers in the households, what the status of the relationship is and in which nation one lives. The odds ratio for respondents to be exposed to ETS at home is significantly higher for males than for females (1, 6) and respondents not living in

Table 1. *Socio-demographic and smoking-related variables of a population based sample of never smokers, ex-smokers, occasional and daily smokers in five European countries*

			Germany	Greece	Poland	Sweden	UK
Never smokers	age	m	39.84	35.31	37.13	36.43	39.60
		SD	12.13	11.54	12.73	11.64	12.14
	male		46.2%	32.4%	27.0%	44.5%	34.8%
	living in relationship		63.9%	63.2%	60.0%	59.1%	62.1%
	living in a smoking household		19.9%	38.1%	23.6%	6.8%	10.4%
Ex-smokers	age	m	46.45	45.15	47.04	43.24	44.16
		SD	10.09	9.08	10.88	10.94	11.54
	male		53.5%	61.3%	43.4%	45.0%	51.9%
	living in relationship		76.0%	86.1%	79.6%	73.6%	72.5%
	living in a smoking household		26.4%	43.4%	26.5%	8.5%	13.8%
Occasional smokers (during the last 6 months)	age	m	36.45	41.10	35.25	34.82	35.87
		SD	10.95	10.60	12.12	12.59	11.50
	male		48.6%	35.6%	30.2%	48.5%	47.4%
	living in relationship		67.6%	63.8%	57.1%	52.6%	48.7%
	living in a smoking household		52.8%	67.8%	52.4%	37.14%	62.8%
	how many occasions	m	6.2	4.7	5.0	3.8	5.6
		SD	6.1	5.2	6.0	4.9	6.4
	cigarettes per occasion	m	4.9	7.5	8.7	4.2	8.5
		SD	4.8	10.4	12.5	3.8	10.5
Current smokers (smoking daily)	age	m	38.55	37.6	41.4	42.9	38.26
		SD	11.76	10.0	11.9	11.1	11.55
	male		50.8%	46.0%	49.4%	35.8%	50.0%
	living in relationship		57.5%	65.8%	68.9%	65.0%	51.0%
	living in a smoking household		98.5%	97.5%	98.5%	100.0%	99.6%
	age onset	m	17.3	19.6	19.4	16.2	17.0
		SD	4.0	5.1	3.6	4.0	5.4
	cpd (cigarettes per day)	m	15.1	20.5	15.4	13.3	14.7
		SD	9.0	12.4	7.3	7.4	8.2

a relationship (living single) than respondents living in a relationship like marriage and others (1, 5). The odds ratio is lower for never smokers than for occasional smokers (0.640) people with no smoker in the household (0.495) and people in Sweden or Poland (with Greece being the reference category). The odds ratio to be exposed to ETS outside of home is significantly higher for male respondents (1.914). The odds ratio is lower for respondents with no smokers in the household and respondents living in the UK or Sweden. There was no significant result for smoking status with ETS outside of the home. The detailed results of the multinomial regression are presented in Table 3.

Non-smokers in all countries are more in favour of smoking bans than smokers in their respective country, the means of agreement towards these measures are all lower. There are differences in the degree of agreement depending on where smoking should be prohibited. While bans in the workplace, on public transportation and public buildings is agreed on, with means below 3 for smokers and non smokers in all countries, the situation differes in respect of bans in public places, restaurants/cafés and bars and pubs. Smokers in Germany, Greece, Poland and the UK disagree with bans in bars and pubs (means above 3, in Germany and Greece they also disagree with bans in restaurants and cafés, in Germany and Sweden with bans in public places. The detailed results are given in Table 4.

Non-smokers disagree with anti-governmental regulations more than smokers. Also, they agree more with pro-governmental regulations than smokers. In comparison of the means agreement to pro- and anti-governmental regulations there is generally more agreement to pro-governmental regulation than to anti-governmental regulation (all means are lower for smokers and non-smokers in all countries). Smokers as well as non-smokers believe in the harmfulness of passive smoking, the mean agreement lies between 1.25 (non-smokers in Greece) and 1.89 (smokers in the UK). The detailed results are given per item, country for smokers and non smokers in Table 4.

An analysis of variance with the dependent variable attitude towards TC measures and the independent variables nation and smoking status resulted in significant results for all three scales.

Table 2. *Exposure to Environmental Tobacco Smoke by smoking status and place of exposure in five European countries*

		Germany		Greece		Poland		Sweden		UK		Total
		n	%	n	%	n	%	n	%	n	%	%
Never smokers	at home	27	12.22%	76	31.15%	56	23.63%	11	4.98%	35	12.96%	17.18%
	at work	51	23.08%	94	38.52%	69	29.11%	26	11.76%	45	16.67%	23.89%
	in leisure time	130	58.82%	157	64.34%	129	54.43%	76	34.39%	173	64.07%	55.74%
	no	56	25.34%	38	15.57%	61	25.74%	128	57.92%	73	27.04%	29.84%
Ex-smokers	at home	24	18.60%	25	23.58%	26	23.01%	9	6.98%	14	17.50%	17.59%
	at work	53	41.09%	42	39.62%	40	35.40%	12	9.30%	17	21.25%	29.44%
	in leisure time	81	62.79%	65	61.32%	55	48.67%	35	27.13%	61	76.25%	53.32%
	no	26	20.16%	22	20.75%	37	32.74%	86	66.67%	12	15.00%	32.85%
Occasional smokers	at home	11	15.28%	16	27.12%	11	17.46%	14	14.43%	21	26.92%	19.78%
	at work	20	27.78%	23	38.98%	19	30.16%	21	21.65%	19	24.36%	27.64%
	in leisure time	46	63.89%	35	59.32%	37	58.73%	59	60.82%	69	88.46%	66.67%
	no	14	19.44%	13	22.03%	15	23.81%	29	29.90%	4	5.13%	20.33%
Total	at home	62	14.69%	117	28.61%	93	22.52%	34	7.61%	70	16.36%	17.74%
	at work	124	29.38%	159	38.88%	128	30.99%	59	13.20%	81	18.93%	26.00%
	in leisure time	257	60.90%	257	62.84%	221	53.51%	170	38.03%	303	70.79%	57.01%
	no	96	22.75%	73	17.85%	113	27.36%	243	54.36%	89	20.79%	28.98%

When looking at the bivariate comparisons of countries and exposure to ETS there were no significant differences on the belief about the harmfulness of smoking between Germany and the UK, between Sweden and Poland and between respondents exposed to ETS at home and respondents not being exposed. Anti-governmental regulations did not differ between Germany and Poland, the UK and Sweden, the UK and Greece and Sweden and Greece. Pro-governmental regulations did not differ between Germany and Poland and the UK and Sweden. All other comparisons revealed significant results.

Table 3. *Result of a multinomial regression predicting exposure to ETS*

	Exposure to ETS		
Parameter	no	yes, but not at home	yes, at home
Age	ref	0.984*	0.965*
Male	ref	1.914*	1.598*
Female	ref	ref	ref
Never smoker	ref	0.910	0.640*
Ex-smoker	ref	0.772	0.738
Occasional smoker	ref	ref	ref
No smokers in household	ref	0.372*	0.495*
Smokers in household	ref	ref	ref
Not living in relationship	ref	1.150	1.488*
Living in relationship	ref	ref	ref
Germany	ref	0.744	0.874
UK	ref	0.454*	1.163
Sweden	ref	0.135*	0.192*
Poland	ref	0.781	0.635*
Greece	ref	ref	ref

* p<0.05, ref = reference category

CONCLUSIONS

For the first time there has been an examination of exposure to ETS and attitudes towards TC activities in different countries of the European Union that used a population-based sample. The examination delivers two main results.

The results indicate that exposure to ETS differs between countries and is dependent on smoking status in the expected way. While in countries with a more restrictive TC policy like Sweden the exposure to ETS is perceived as being very low, it is considerably higher in countries with less restriction like in Germany. For non-smokers in Sweden the exposure to ETS is much lower than for non-smokers in the other countries. The most exposure for non-smokers and occasional smokers occurs in their leisure time. Since at the moment none of the countries under examination has put a complete smoking ban into place, this result is not surprising.

Smokers as well as non-smokers believe in the harmfulness of passive smoking and support TC measures that protect non-smokers from the exposure to ETS. Non-smokers agree to more governmental support and disagree with non-governmental support more than smokers. This is an important result for TC advocates: the effort to convince the population that passive smoking is harmful has been successful; the population agrees that non-smokers need

Table 4. *Agreement to measures of tobacco control to decrease exposure to ETS by smoking status and country*

		Germany		Greece		Poland		Sweden		UK	
		non-smoker	smoker	non-smoker	smoker	non-smoker	smok-er	non-smoker	smoker	non-smoker	smoker
Smoking should be banned at the workplace	m	1.83	2.71	1.66	2.52	1.77	2.45	1.91	2.91	1.62	2.66
	SD	1.20	1.53	1.14	1.64	1.28	1.53	1.29	1.65	1.15	1.55
Smoking should be banned on public transportation	m	1.37	1.63	1.16	1.36	1.21	1.34	1.29	1.55	1.24	1.59
	SD	0.97	1.26	0.64	1.00	0.76	0.91	0.86	1.23	0.78	1.19
Smoking should be banned in public buildings	m	1.62	2.29	1.34	1.78	1.44	1.82	1.31	1.78	1.52	2.13
	SD	1.09	1.48	0.83	1.30	1.00	1.30	0.81	1.36	1.01	1.39
Smoking should be banned in public places	m	2.80	3.68	1.47	2.10	1.44	2.13	1.99	3.12	1.84	2.86
	SD	1.48	1.50	0.98	1.52	1.03	1.45	1.36	1.70	1.28	1.59
Smoking should be banned in all restaurants and cafés	m	2.29	3.65	2.40	3.48	2.12	2.94	1.32	1.92	1.64	2.58
	SD	1.40	1.50	1.45	1.56	1.39	1.63	0.86	1.46	1.18	1.58
Smoking should be banned in bars and pubs	m	2.70	3.95	3.01	3.98	2.28	3.13	1.34	2.10	2.05	3.43
	SD	1.45	1.37	1.51	1.44	1.40	1.65	0.87	1.59	1.38	1.59
Belief about harmfulness	m	1.46	1.80	1.25	1.49	1.33	1.51	1.34	1.61	1.39	1.89
	SD	0.60	0.75	0.40	0.67	0.59	0.67	0.52	0.73	0.65	0.84
All employees should be able to do their job without being pestered by tobacco smoke	m	1.27	1.57	1.16	1.43	1.17	1.30	1.13	1.28	1.30	1.62
	SD	0.64	0.93	0.59	0.95	0.63	0.74	0.51	0.79	0.71	1.00
Passive smoking is a nuisance	m	1.58	2.07	1.15	1.24	1.36	1.70	1.53	1.89	1.50	2.12
	SD	0.97	1.30	0.56	0.61	0.83	1.11	1.05	1.32	0.99	1.23
Passive smoking causes lung cancer	m	1.61	1.93	1.39	1.75	1.35	1.49	1.45	1.76	1.45	2.05
	SD	0.90	1.06	0.75	1.17	0.81	0.88	0.80	1.07	0.82	1.21
Passive smoking causes health problems	m	1.36	1.66	1.27	1.50	1.42	1.57	1.29	1.53	1.32	1.83
	SD	0.72	1.02	0.64	0.95	0.84	0.95	0.71	0.97	0.73	1.15
Anti-governmental regulation	m	2.78	2.39	2.93	2.52	2.78	2.52	3.11	2.55	3.07	2.55
	SD	0.85	0.80	0.74	0.78	0.74	0.71	0.88	0.89	1.00	0.97
In places where smoking never was a problem before, smoking should not be banned	m	2.32	2.02	3.23	3.10	2.47	2.60	3.14	2.50	3.08	2.62
	SD	1.35	1.35	1.61	1.60	1.56	1.57	1.58	1.58	1.50	1.57
I feel governments are being unreasonable, acting that strictly against smoking	m	3.36	3.10	3.87	3.57	3.51	3.14	3.44	3.14	3.49	2.91
	SD	1.39	1.35	1.40	1.49	1.43	1.47	1.33	1.40	1.42	1.46
Government are going too far in limiting the freedom of smokers	m	3.14	2.64	3.78	3.39	3.86	3.28	3.63	2.84	3.51	2.76
	SD	1.38	1.38	1.33	1.53	1.29	1.42	1.36	1.49	1.45	1.50
It is very important to me that people can decide for themselves where and when they want to smoke	m	3.07	2.16	2.14	1.75	2.78	2.37	3.22	2.37	3.20	2.34
	SD	1.47	1.28	1.44	1.24	1.69	1,56	1.48	1.45	1.53	1.46
When it comes to smoking or not-smoking personal freedom is very important to me	m	2.03	1.93	1.47	1.41	1.35	1.21	2.12	1.89	2.15	1.82
	SD	1.29	1.13	0.95	0.93	0.87	0.68	1.26	1.28	1.37	1.24
Pro-governmental regulations	m	1.79	2.15	1.63	1.96	1.78	2.04	1.85	2.37	1.90	2.43
	SD	0.81	0.82	0.69	0.96	0.81	0.91	0.84	1.04	0.88	1.05
All in all smoking bans are fair	m	1.60	1.93	1.70	1.96	1.62	1.84	1.73	2.57	1.85	2.72
	SD	0.96	1.17	1.03	1.27	1.01	1.15	1.19	1.55	1.16	1.50

Table 4 cont. *Agreement to measures of tobacco control to decrease exposure to ETS by smoking status and country*

		Germany		Greece		Poland		Sweden		UK	
		non-smoker	smoker	non-smoker	smoker	non-smoker	smok-er	non-smoker	smoker	non-smoker	smoker
Problems between smokers and non-smokers are best solved with distinct regulations	m	1.78	1.91	1.79	2.13	2.23	2.58	1.81	2.04	2.17	2.52
	SD	1,05	1.18	1.19	1.44	1.34	1.50	1.06	1.26	1.22	1.29
A government should protect non-smokers from second-hand smoke	m	2.01	2.66	1.42	1.79	1.48	1.76	1.96	2.55	1.68	2.23
	SD	1.18	1.02	0.86	1.22	0.98	1.16	1.17	1.44	1.02	1.29

Footnote: Response pattern ranges from 1= "absolutely agree" to 5 = "absolutely disagree"

to be protected. Now more effort can be put into implementing TC activities to follow through. The results indicate that non-smokers want more governmental regulation.

We conclude that smoking restrictions are associated with lower levels of actual exposure to ETS. Even though exposure to ETS is also dependent on age, sex, the smoking status and whether there are smokers in the households restrictions themselves lead to changes in exposure. However, more sophisticated analyses are needed to study the effect of smoking restrictions, particularly longitudinal studies are needed.

Key Points

- For the first time there has been an examination of exposure to ETS and attitudes towards TC activities in different countries of the European Union that used a population-based sample.
- Smoking restrictions are associated with lower levels of actual exposure to ETS.
- Smokers as well as non-smokers believe that passive smoking is harmfull and support TC measures that protect non-smokers from the exposure to ETS.

Acknowledgment

This study received support from ENSP (European Network for Smoking Prevention) and has been funded by the European Commission in the framework of the EU Public Health Programme 2003-2008 (reference number 2004323).

REFERENCES

1. USDHHS. Health effects of exposure to environmental tobacco smoke. North Bethesda (MD): US Department of Health and Human Services, Public Health Service; 1999.
2. Fong GT, Cummings KM, Borland R, Hastings G, Hyland A, Giovino GA, et al. The conceptual framework of the International Tobacco Control (ITC) Policy Evaluation Project. Tob Control. 2006 Jun;15 Suppl 3: iii3-11.
3. Joossens L, Raw M. The Tobacco Control Scale: a new scale to measure country activity. Tob Control. 2006 Jun;15(3):247-53.
4. Ashley MJ, Cohen J, Bull S, Ferrence R, Poland B, Pederson L, et al. Knowledge about tobacco and attitudes toward tobacco control: how different are smokers and nonsmokers? Can J Public Health. 2000 Sep-Oct;91(5):376-80.
5. Thyrian JR, John U. Measuring activities in tobacco control across the EU. The MAToC. Subst Abuse Treat Prev Policy. 2006 Apr 18;1: 9.
6. Doucet JM, Velicer WF, Laforge RG. Demographic differences in support for smoking policy interventions. Addict Behav. 2007 Jan;32(1):148-57.
7. Borland R, Yong HH, Cummings KM, Hyland A, Anderson S, Fong GT. Determinants and consequences of smoke-free homes: findings from the International Tobacco Control (ITC) Four Country Survey. Tob Control. 2006 Jun;15 Suppl 3:iii42-50.
8. Unger JB, Rohrbach LA, Howard KA, Boley Cruz T, Johnson CA, Chen X. Attitudes toward anti-tobacco policy among California youth: associations with smoking status, psychosocial variables and advocacy actions. Health Educ Res. 1999 Dec;14(6):751-63.
9. Borland R, Yong HH, Siahpush M, Hyland A, Campbell S, Hastings G, et al. Support for and reported compliance with smoke-free restaurants and bars by smokers in four countries: findings from the International Tobacco Control (ITC) Four Country Survey. Tob Control. 2006 Jun;15 Suppl 3:iii34-41.
10. Willemsen MC. Smokers under fire? Impact of the new tobacco control Act on smokers, with special reference to differences between social-economic groups. The Hague: STIVORO; 2006. (In Dutch.)
11. Willemsen MC, Görts CA, Van Soelen P, Jonkers R, Hilberink SR. Exposure to environmental tobacco smoke (ETS) and determinants of support for complete smoking bans in psychiatric settings. Tob Control. 2004 Jun;13(2):180-5.

Received April 29, 2009
Accepted in revised form July 1, 2009