Annoyance from environmental tobacco smoke and support for no-smoking policies at eight large Dutch workplaces

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Abstract

Objective - To collect descriptive data on annoyance from environmental tobacco smoke (ETS), attitudes toward smoking at the workplace, and support for a no-smoking policy.

Design - Survey of eight large companies in four sectors of Dutch industry.

Subjects - A representative sample of smoking and non-smoking employees (n = 1480).

Results - Thirty-five per cent of non-smoking employees felt it was "annoying" to "very annoying" when their colleagues smoked during worktime, and 78% thought a smoky work environment was harmful to their health. About two-thirds of non-smokers "sometimes" to "often" experienced annoyance from ETS at their workplace. The individual solution approach (no explicit policy) is not only rejected by most nonsmokers but also by many smokers. In three sectors of industry, there was much support among employees for a smoking ban except for work areas designated for smoking.

Conclusions - These results could encourage more companies to implement smoking restrictions and they may be used as reference data by companies wanting to develop effective no-smoking policies.

(Tobacco Control 1996;5:132-138)

Keywords: environmental tobacco smoke, passive smoking, workplace, smoking policy

Introduction

Although it has been known for decades that active smoking causes disease in smokers, conclusive evidence that passive smoking is also harmful to health has accumulated more recently. Research has shown that involuntary (passive) smoking is a cause of disease, including respiratory illness and lung cancer.¹ A report of the US Environmental Protection Agency concluded that passive smoking is a known human carcinogen.² The Dutch Institute of Cancer Research has confirmed this conclusion³ and the Dutch Health Council has declared that it is very likely that prolonged exposure to environmental tobacco smoke (ETS) increases the risk of lung cancer.⁴ Publications such as these about the harmful health effects of passive smoking have led to measures against smoking in public buildings and workplaces in many developed countries. The best

strategy to protect non-smokers' health is to prohibit smoking altogether or to limit smoking to enclosed, separately ventilated areas, because it is not possible to determine safe exposure levels for carcinogenic substances.²⁻⁴

In 1989, the European Community adopted a resolution encouraging member states to adopt measures to ban smoking in public places and in all forms of public transport. Many European Union (EU) countries have now implemented such policies for state-owned premises. However, with the exception of France, very few countries have provisions relating to smoking on private premises accessible to the public.⁶ The health dangers of involuntary smoking are much more important at workplaces than in public places, because of the high frequency and long duration of exposure to ETS in workplaces. However, the absence of national legislation means that companies still have to be motivated to implement clear non-smoking policies voluntarily. The extent of annoyance from ETS can be one important motive for decreasing smoking at the workplace, probably more so than health statistics. In addition to being unpleasant, exposure to ETS can cause irritation of the eyes and mucous membranes of the nasal and throat cavity.¹⁷

An inquiry for the Dutch Foundation of Smoking and Health showed that only 25% of Dutch worksites took action against ETS in 1990.⁸ However, most of these measures were limited to spreading posters to encourage non-smoking; only 31% of these companies implemented bans on smoking. Many employers were reserved regarding smoking bans. Hearing no complaints about tobacco smoke was the reason most mentioned for deciding not to implement smoking bans. Quite often managers assume there is no annoyance problem, as long as workers do not voice complaints about ETS. A better strategy would be to ask employees directly about annoyance caused by tobacco smoke and the support for smoking restrictions. Surveys in the US have shown that most smokers and non-smokers favour restrictions on smoking at the workplace.⁹ However, few data exist from European countries. This is especially important, because smoking prevalence continues to be higher in Europe than the US. In 1994, smoking prevalence in the EU was 34% (42% of men and 28% of women), compared with less than 26% in 1990 in the US.¹⁰ The Netherlands is among the European countries with a high smoking prevalence (37% in 1993 according to one survey¹¹).

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Another reason for the reservations expressed by companies could be the expectation that insufficient support within the company for smoking bans could lead to social unrest and conflicts at the workplace. However, studies show that measures to reduce smoking (except for a complete smoking ban) have led to very few conflicts or resistance at the workplace.¹²⁻¹⁶ Some studies have shown that support for smoking bans increased after their implementation.¹⁷⁻¹⁸ There are few studies about the attitudes of European employees toward smoking bans. Implementation of smoking restrictions results in a decrease in annoyance caused by tobacco smoke because of a reduction in tobacco consumption among employees at the worksite.^{12,19-25} Some research studies show an effect of smoking bans on actual smoking prevalence among employees²⁶⁻³¹ whereas other studies show no effect.^{12,19,20,23-25}

This paper presents data from employees in four sectors of industry in the Netherlands on annoyance caused by tobacco smoke at workplaces and on support for measures to reduce worksite smoking. The results may be of interest to health educators and policy makers in countries that may be struggling to implement worksite bans.

Methods

RESEARCH POPULATION

Within the framework of a continuing study about the effectiveness of workplace smoking cessation programmes, random samples were taken from employee files of eight large companies. Because the size of the companies varied and we wanted to be able to relate the results to specific companies, a relatively larger sample at the smaller companies was taken: the sample fractions ranged from 10% at the largest company (3500 employees) to 33% at the smallest (295 employees). The samples were drawn from files in which all employees were listed in alphabetical order. A sample of 10%, for example, was attained by choosing each 10th person from the list. The same procedure was used in each company.

After an announcement in company newsletters, employees who were in the random sample were approached by telephone for an interview. The interview started with an explanation about the purpose of the interview—namely, to assess employees' opinion about smoking at work—and about the fact that the results would be treated in strict confidence. After agreeing to participate, they were interviewed by means of computer-assisted telephonic interviewing (CATI).

The eight companies belong to four sectors of industry: chemistry (1376 employees in two chemical production companies), transport (865 employees in two districts of a bus company), telecommunications (6359 employees in two districts of a telecommunications company), and local government (2318 employees in two mid-sized communities). The current smoking policy for each company

was examined by interviewing company representatives and making observations during visits.

MEASUREMENTS

The following demographic variables were recorded: sex, age, education level, type of work (office work, manual labour or a combination), and shift system.

Smoking behaviour was measured by asking whether the respondent smoked, what was smoked (roll-your-own cigarettes, manufactured cigarettes, pipe, cigars), and how much was smoked daily and at the workplace.

Attitudes about smoking at the workplace were measured by the following questions: "Does it bother you when smoking is allowed at the workplace?", "Do you think a smokey work environment is harmful to your health?", and "Do you think the chance of getting cancer for non-smokers is greater when people smoke at the workplace?" The fourth item measured a possible aspect of smoking that is typically Dutch and difficult to translate—namely, whether smoking increases sociability when people are together. A 5-point scale was used that ranged from completely agree to completely disagree.

Annoyance from ETS among non-smokers was measured by asking a general question: "How often do you experience annoyance resulting from ETS in your company?" The response choices were: never, sometimes, regularly, often, very often, and always. Secondly, non-smokers were asked how often they found tobacco smoke a nuisance at their workplace, and in meeting rooms, canteens, corridors, lifts (elevators), and restrooms.

Both smokers and non-smokers were asked whether they advocated smoking restrictions in the previously mentioned areas. In addition, they were asked to what extent they agreed with several alternative smoking policies (−3 = completely disagree to 3 = completely agree). Four policy options were considered, varying from no explicit policy to a complete smoking ban (see table 4). These options correspond to international classifications of policies for non-smoking measures.^{1,5,32}

STATISTICAL ANALYSES

Differences among the four sectors of industry were analysed with χ^2 tests. Multiple logistic regression analysis was used to assess differences among sectors of industry with regard to employee support for smoking policy options while adjusting for demographic variables and smoking status.

Results

Of 1730 employees who were approached for an interview, 1480 interviews were completed. The response rates among the companies ranged from 75% to 93% (mean = 86%). χ^2 tests were used to compare the sex and age distributions of each sample to data for the full workforce provided by the companies' Departments of Human Resources. These comparisons showed that the samples were representative, with the exception of older

employees, who were over-represented in the samples of one of the local governments ($\chi^2(4) = 10.5$; $p<0.05$) and a telecommunications company ($\chi^2(4) = 20.6$; $p<0.001$).

COMPARISONS AMONG COMPANY TYPES
The smoking policies in place at the times of the interviews (March to September 1993) differed considerably among the four types of companies, but within each company type they were similar. This also applied to demographic features. Employees did not differ significantly from company to company within the same sector of industry concerning attitudes about smoking at the workplace. Companies within each sector were very also similar regarding company size and type of work. Therefore, this article focuses on differences and similarities among sectors of industry, instead of focusing on differences among individual companies.

DEMOGRAPHIC FEATURES
Table 1 shows the demographic features of each company type. Respondents in the chemical industry and transport were more likely to be male, to perform manual labour, and to work in shifts, compared with the respondents in the telecommunications sector and those working for the local government. (In the chemical industry respondents usually worked as technicians and operators in the factory, whereas the transport companies employed mainly bus drivers.) The average level of education in the transport industry was lower than in the other types of industry. Respondents from the local government more often had a high level of education (they included different occupations, such as fire workers, social security workers, civil servants, etc.). Common professions in the telecommunications sector were telephone operators, store employees, office employees, and technicians.

SMOKING BEHAVIOUR
Smoking prevalence did not differ significantly among the industry sectors: on average 34.4% smoked (table 1). (By comparison, in 1993 between 33% and 37% of the Dutch adult population smoked, depending on the survey method used.^{11 33}) Smoking respondents in the

chemical and transport industry more often consumed roll-your-own cigarettes (versus manufactured cigarettes) (75% and 85% of smokers, respectively) than the smoking respondents in the telecommunications sector and local government (51% and 54% respectively) ($\chi^2(3) = 39.0$; $p<0.001$). The prevalence of cigar and pipe smokers did not differ among the sectors. Between 7% and 12% of all smoking respondents smoked cigars and between 3% and 5% smoked pipe tobacco. (The percentages add to more than 100% because some smokers used more than one tobacco product.)

The smokers reported an average daily consumption of 16 pieces of smoking articles (roll-your-own cigarettes, manufactured cigarettes, pipe and/or cigars). A one-way analysis of variance showed no significant differences among sectors at the $p = 0.05$ level. About half this amount was consumed at the workplace (8.3 cigarettes). Workplace consumption was significantly lower in the chemical industry, than in the telecommunications companies (7.3 vs 9.3 cigarettes; $F(3;501) = 3.52$; $p<0.05$).

SMOKING POLICY MEASURES
Interviews with company representatives and personal observations provided details about company smoking policies. All worksites had a moderate smoking restriction—that is, restrictions were in place only in specific areas. Substantial differences existed among the four sectors of industry concerning which areas were smoke-free.

Because of the danger of explosion, smoking was not allowed in the chemical companies at all outdoor premises, in factories, and in laboratories. In addition, smoking was not allowed in two-thirds of the canteens. Furthermore, smoking limitations were operative in control rooms, where smoking was allowed only in designated smoking areas. Employees in most work offices were encouraged to come to mutual agreements about smoking, but no formal restrictions existed in these offices.

At local governmental worksites, smoking bans were in place in common rooms such as meeting rooms, corridors, restrooms, lifts, waiting rooms, and (sections of) canteens. However, interviews with staff members of one of the local government organisations revealed that these smoking restrictions were hardly observed, despite a national tobacco law stating that smoking is prohibited in public places, which came into effect in 1990. Little attention was paid to smoking bans, and restrictions were incompletely identified by posted signs. Thus, for many employees it was unclear where smoking was allowed. No restrictions existed in offices.

In the transport companies, smoking restrictions were only operative on buses (the workplace of the drivers). Although violations could lead to sanctions, many drivers still smoked on buses. There were no smoking restrictions for canteens, and employees were allowed to smoke in offices.

Table 1 Demographic features of each type of company

	Chemical industry (n=391)	Telecommunications (n=506)	Transport (n=198)	Local government (n=385)	All companies (n=1480)
Smoker (%)	30.2	37.0	36.0	34.0	34.4
Male (%)	92.1	71.3	91.9	69.9*	79.2
Mean age (SD)	41.2 (9.1)	39.9 (9.3)	41.6 (7.9)	39.4 (8.7)	40.4 (8.9)
Type of work (%)					
Manual labour	38.6	15.6	41.9	17.7*	25.7
Office work	22.0	10.9	48.0	13.9	19.6
Combination manual/office	39.4	73.5	10.1	68.6	54.7
Education level (%)†					
Low	15.1	24.4	58.6	14.5*	24.0
Medium	55.1	58.5	36.9	41.9	50.3
High	29.8	17.1	4.5	43.6	25.7
Working in shifts (%)	40.4	12.5	85.4	9.4*	28.8

* $p<0.001$ (χ^2 tests between four branches).
† Low = primary school, lower vocational training; medium = preparatory school, middle vocational training; high = university, higher vocational training.

In the telecommunications sector, smoking restrictions existed in rooms with smoke-sensitive equipment and in small sections of canteens. In almost all other places smoking was allowed, including conference rooms and work offices.

ATTITUDES TOWARD SMOKING IN THE WORKPLACE

The four sectors did not differ significantly from each other concerning attitudes of non-smokers toward smoking at the workplace. An average of 54% of the non-smokers claimed to be bothered or very bothered by smoking at the workplace (compared with 7% of the smokers), 79% thought a smokey work environment was harmful to their health (compared with 60% of the smokers), 79% thought that smoking at the workplace increases sociability when people get together (compared with 25% of the smokers), and 49% thought non-smokers had more chance of getting cancer because of smoking at the workplace (compared with 20% of the smokers).

ANNOYANCE FROM TOBACCO SMOKE

Table 2 shows how often non-smokers perceived tobacco smoke as annoying at various places in the companies. In all sectors of industry more than two-thirds of non-smokers claimed to be annoyed at least sometimes by ETS in their company as a whole. Depending on the type of sector, the percentage of non-smokers who experienced annoyance in meeting rooms varied from 37% to 51%, in canteens from 18% to 62%, in corridors from 11% to 21%, and in lifts or restrooms from 3% to 17%.

More employees in the transport sector were annoyed by tobacco smoke in canteens, compared with the other types of companies. On the other hand, respondents from the transport sector experienced significantly less annoyance at their own work office. This is because these employees consider the bus to be their work office. This is in contrast to non-smokers in the telecommunications and government sectors (where 35% and 38%, respectively, were annoyed by ETS at their work office).

Table 2 Proportion (%) of non-smoking employees experiencing annoyance from ETS, by industry sector †

Places	Chemical industry (n=273)	Telecommunications sector (n=319)	Transport sector (n=125)	Local government (n=254)
Company as a whole	69.3	71.2	67.2	67.7
Own work office	26.4	35.1	16.8	37.8 ***
Meeting rooms	38.8	51.4	36.8	37.0 ***
Canteens	17.6	32.9	62.4	28.3 ***
Corridors	11.0	14.4	14.4	20.5 *
Lifts, restrooms‡	2.9	17.2	5.7	13.3 ***

† Proportion of non-smokers who are at least sometimes annoyed by ETS at their workplace, based on the question: "How often do you experience annoyance resulting from ETS in your company?" (with answers ranging from never to always).

‡ Because answers concerning lifts and restrooms were practically identical, the average from both categories is presented.

* Differences across sectors significant, $p < 0.05$ (χ^2 test).

*** Differences across sectors significant, $p < 0.001$ (χ^2 test).

SUPPORT FOR SMOKING BANS

In all sectors of industry most non-smokers and smokers supported a smoking ban in meeting rooms (table 3). Regardless of company type, a smoking ban for one's own work office was endorsed by non-smokers, whereas most smokers rejected this policy. Only in the chemical sector did most non-smokers and smokers support a smoking ban in canteens. Support among non-smokers for smoking bans in corridors, lifts, and restrooms was lowest in the transport sector.

Table 4 shows that few non-smokers favoured the "individual solution" approach in which there is no explicit policy (option 1). Only a bare majority of smokers in the telecommunications and transport sectors supported this policy.

Support for a moderate smoking restriction (smoking bans in public areas only) (option 2) was significantly higher among non-smokers in local government than among non-smokers in other sectors. Smokers in local government were more often in favour of smoking bans during meetings (also option 2) than smokers in the other sectors.

A policy restricting smoking in the company except in designated smoking rooms (option 3) was supported more by employees in the chemical sector than by employees in the other sectors. In addition, a narrow majority of smokers and non-smokers in the transport and local government sector supported this option.

In all company types, the percentage of non-smoking respondents who were in favour of a worksite-wide smoking ban (option 4) was less than 12%.

Table 5 shows odds ratios from logistic regression analyses for support for smoking bans in one's own office, for a general smoking ban (smoking restricted to designated areas), and for a complete smoking ban, for each variable of interest, adjusted for all other variables in the table.

Support for a smoking ban in one's own office was positively associated with being non-smoker, being female, and doing shift work. Doing office work was only of marginal significance (lower 95% confidence limit = 1.01). Workers in the telecommunications sector and workers in local government had a lower odds of supporting bans for one's own office.

Support for a general smoking ban (except in designated areas) was greater with non-smokers, older employees (>45 years), office workers, and workers in government and the chemical industry.

Support of a total smoking ban was positively associated with being a non-smoker, being older (>45 years) and doing manual labour. Workers in the chemical industry had marginally lower odds of supporting this policy than workers in the transport sector (95% confidence interval close to 1).

Discussion

One important reason why many employers do not impose smoking bans is their perception that employees are not bothered by tobacco

Table 3 Percentages of employees in each company type in favour of smoking bans in different rooms, by smoking status

Rooms	Non-smokers					Smokers				
	Chemical companies (n=273)	Telecommunications (n=319)	Transport (n=125)	Local government (n=254)	Total (n=971)	Chemical companies (n=118)	Telecommunications (n=187)	Transport (n=73)	Local government (n=131)	Total (n=509)
Own work room	65.2	58.6	71.2	55.1	61.2	39.0	20.9	32.9	31.3***	29.5
Meeting rooms	81.3	84.3	72.0	84.6	82.0	63.6	58.8	50.7	77.1***	63.5
Canteens	68.5	35.1	44.8	54.3***	50.8	52.5	23.0	20.5	33.6***	32.2
Corridors	51.6	35.1	25.6	44.5***	41.0	60.2	47.1	38.4	64.9	53.4
Lifts	81.7	82.4	32.8	81.5***	75.6	81.4	84.0	42.5	79.4***	76.2
Restrooms	71.4	67.4	52.0	72.0***	67.8	78.8	74.3	67.1	74.0	74.3

*** Differences across sectors significant, $p < 0.001$ (χ^2 test).

Table 4 Percentage of employees per type of company favouring various smoking policy options, stratified by smoking status

Non-smoking policy options (Questionnaire items)	Non-smokers					Smokers				
	Chemical companies (n=273)	Telecommunications (n=319)	Transport (n=125)	Local government (n=254)	Total (n=971)	Chemical companies (n=118)	Telecommunications (n=187)	Transport (n=73)	Local government (n=131)	Total (n=509)
Option 1: No explicit policy 'Employees come to agreements about where and when smoking is allowed'	17.6	22.9	36.0	19.7***	22.2	28.8	51.9	53.4	42.7***	44.4
Option 2: Moderate smoking restriction 'For public places, such as corridors, smoking should be prohibited'	59.3	47.6	44.8	68.1***	55.9	70.3	60.4	56.2	70.2	64.6
'During conferences and other meetings, employees should not be allowed to smoke'	89.4	89.0	83.2	91.3	89.0	77.1	67.4	61.6	86.3***	73.7
Option 3: General no-smoking policy 'Smoking should not be allowed anywhere in our workplace, except in designated smoking areas'	79.9	65.8	65.8	68.9***	70.5	76.3	37.4	54.8	53.4***	53.0
Option 4: Complete smoking ban 'Smoking should be prohibited on all company premises, without exceptions'	5.1	8.5	11.2	9.1	8.0	2.5	1.1	2.7	3.1	2.2

*** Differences across sectors significant, $p < 0.001$ (χ^2 test).

Answer choices "completely agree", "agree" and "somewhat agree" were combined into one category ("agree").

† The two questions covering option 2 were not mutually exclusive.

Table 5 Logistic regression analysis of employees' likelihood of supporting non-smoking policy options (n=1480): odds ratios and 95% confidence intervals

Variable	Smoking ban in one's own office	General no-smoking policy	Complete smoking ban
Smoking status			
Smoker	1.0	1.0	1.0
Non-smoker	3.55 (2.79-4.52)***	2.25 (1.78-2.84)***	4.27 (2.23-8.14)***
Age (years)			
<35	1.0	1.0	1.0
35-45	1.26 (0.95-1.66)	1.18 (0.89-1.56)	1.03 (0.55-1.90)
>45	1.03 (0.76-1.39)	1.55 (1.14-2.11)**	2.26 (1.25-4.11)**
Sex			
Female	1.0	1.0	1.0
Male	0.57 (0.42-0.77)***	0.70 (0.52-0.94)	1.06 (0.57-1.96)
Educational level			
Low	1.0	1.0	1.0
Medium	1.23 (0.92-1.71)	0.97 (0.71-1.32)	1.07 (0.59-1.93)
High	2.04 (1.40-2.99)	0.89 (0.61-1.32)	1.28 (0.61-2.68)
Type of work			
Mixed type of work	1.0	1.0	1.0
Manual labour	1.13 (0.78-1.62)	1.30 (0.90-1.87)	2.17 (1.10-4.29)*
Office work	1.37 (1.01-1.88)*	1.82 (1.31-2.52)***	1.78 (0.99-3.23)
Shift system			
No shifts	1.0	1.0	1.0
Shift worker	2.33 (1.69-3.21)***	1.41 (1.01-1.98)*	0.61 (0.31-1.20)
Company type			
Transport	1.0	1.0	1.0
Chemical industry	0.65 (0.43-0.99)	3.02 (1.96-4.65)***	0.43 (0.19-0.98)*
Telecommunications	0.49 (0.31-0.77)**	1.22 (0.79-1.89)	0.70 (0.30-1.62)
Local government	0.42 (0.27-0.67)***	1.75 (1.10-2.77)*	0.82 (0.35-1.92)

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

smoke at the workplace.⁸ The main conclusion of this study is that annoyance caused by tobacco smoke in various sectors of Dutch industry was considerable. In all sectors, more than 66% of non-smokers claimed to be bothered by tobacco smoke at the workplace (at least sometimes). This is still lower compared

with a Dutch study involving bank employees, in which 80% were found to be annoyed by ETS.³⁴ However, that study was limited by a very low response rate (29%), which may have led to an over-representation of employees in the sample who were more often irritated by tobacco smoke. The discomfort reported in

our study most often occurred in work offices, meeting rooms, and canteens. Seventy-nine per cent of non-smokers thought ETS was harmful to their health.

Strikingly, only 20% of smokers thought ETS exposure at the workplace would increase non-smokers' chances of getting cancer. In our opinion, health education can and should increase efforts to change this opinion.

Knowledge of current smoking policies in individual companies is important for a thorough understanding of our research findings. As part of the study, interviews with staff members were supplemented with observations during visits. During these visits, notes were taken, but there was no systematic use of checklists to examine the extent to which employees complied with smoking restrictions—for example, whether no-smoking signs were present, the presence of environmental tobacco smoke, or whether ashtrays were around.³⁵ Since 1990 Dutch tobacco law asserts that, in state-owned organisations, smoking is prohibited in areas that are accessible to the public. Nevertheless, interviews and observations indicated that there was substantial non-compliance by governmental employees. Employees did not obey the rules and no-smoking signs were not on display. This affirms the findings of inspections conducted in 1994 for the Ministry of Health, Welfare and Sports, which revealed that, in 59% of Dutch public healthcare institutions, non-smoking signs were displayed only partially or not at all.³⁶ Further research is needed to determine the extent to which the tobacco law in general is observed and what determines non-compliance.

With reference to support for smoking restrictions, it was striking that few smokers and few non-smokers favoured the "no explicit policy" option. This finding conflicts with the "common courtesy" solution endorsed by the Dutch tobacco industry as an alternative to policies that restrict or ban smoking. Others have found that the "common courtesy" approach, by itself, is unlikely to substantially reduce exposure to ETS, because most nonsmokers who are bothered by ETS do nothing or simply move away instead of asking smokers to put out their cigarettes.³⁷ Only smokers in the telecommunications and transport sectors favoured this *laissez-faire* option (by a narrow majority). A possible explanation is that these companies had imposed very few restrictions.

Most smokers and non-smokers favoured a smoking ban in meeting rooms, regardless of the type of company they worked for. This suggests that this measure could be implemented in many Dutch companies, and probably in other European companies as well, without significant problems.

Most smokers and non-smokers in the chemical and transportation companies and in local government supported a smoking ban except in designated areas. Through this option, non-smoking is established as the social norm. This policy includes a ban for work areas. A multivariate analysis revealed that

support for a general smoking ban (except in designated areas) was greatest with workers in the chemical industry and in governmental worksites. This may be because the policies that were in place in both these sectors resembled the general no-smoking policy: in the chemical industry smoking was not allowed outdoors and designated smoking areas existed in several production plants, and in governmental organisations smoking was officially restricted to work offices.

Cross-sectional data from a California survey showed that a moderate smoking restriction (option 2) made no difference compared with no policy at all, but that bans for work areas significantly decreased the likelihood of being exposed to ETS, although not as much as a total ban.³⁸ Our results indicated that the idea of a smoking ban for one's own work offices is welcomed by most non-smokers, but not by smokers (about 30%). Support was lowest in telecommunications and governmental worksites and highest in the transport sector. High support for smoking bans among bus drivers can be understood because smoking was prohibited on their place of work (buses).

Studies have shown that employee support for smoking bans increases after smoking restrictions are introduced.¹⁷⁻¹⁸ In our study, this phenomenon was observed cross-sectionally. In local government workplaces, smoking was not allowed in rooms accessible to the general public. Indeed, most governmental employees were in favour of general smoking bans. In the chemical sector, employee smoking was restricted to canteens. Many respondents in this sector favoured a smoking ban in canteens in contrast to respondents in the telecommunications and transport sector, where employees could smoke with few restrictions in canteens.

The results show that employee support for a total smoking ban is extremely low. This may be explained by the Dutch traditional culture of tolerance and respect of individual freedom. However, recent years have seen much publicity in the Dutch press about smokers becoming "the new social pariahs". This clearly demonstrates that social norms about smoking are changing. However, in our opinion, support for total bans is still too low to make it feasible to promote nationwide adoption of complete worksite-wide smoking bans. Indeed, for many European companies the goal of smoke-free workplaces may still be too far in the future. However, if more worksites become smoke-free and their positive experiences are diffused to other worksites, support for complete smoking bans may increase in European companies. At present in the Netherlands, however, there are hardly any worksites to be found that have implemented a complete smoking ban. It will be very difficult for managers to make employees comply with the ban, as long as employee support is so low. In such a situation, the effectiveness of a total ban on workplace smoking will be questionable. Dutch managers currently appear to prefer looking for a consensus solution that fits both smokers' and

non-smokers' interests. Our data show that the "designated smoking areas" option can garner a fair amount of support from employees. Managers will have to be willing to pay the costs associated with creating designated smoking areas (ideally with separate ventilation systems), as long as support for complete smoking bans has not increased substantially.

For the companies participating in this study, the results have offered compelling reasons to strengthen their smoking policy (a general no-smoking policy instead of a moderate policy). We hope these findings will encourage more large companies to impose smoking restrictions to protect non-smoking employees from ETS exposure. Conditions that favour successful implementation of no-smoking policies in large companies have been described elsewhere.^{1,39-41} Active management support, the establishment of an executive committee with representatives of employers and employees, and assessment of employee support for no-smoking policy options are all important prerequisites. The questionnaire employed in this study can be used to determine employee support for smoking policy options at workplaces, and the data from different sectors of Dutch industry can be used as reference data for future efforts in the field of workplace smoking policy in countries with high smoking rates similar to those in the Netherlands.

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