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Exposure to environmental tobacco smoke in public places in Barcelona, Spain

Exposure to environmental tobacco smoke (ETS) has adverse health effects for both children and adults.[1–3] Southern European countries have not had the same level of ETS control measures as other western countries. The purpose of this study was to assess current ETS exposure in several locations in Barcelona, Spain.

We collected airborne nicotine with 31 diffusion monitors containing sodium bisulfate coated filters.[4 5] Between September 1999 and March 2000 different locations were chosen from among the following 18 sites in Barcelona: five underground (subway) stations (n = 5, one measurement in each station); two restaurants (n = 3, one of the restaurants, located in one of the two teaching hospitals referred to below, had measurements taken from smoking and non-smoking areas); two large stores (n = 4, two measurements in each store); two teaching hospitals (n = 4, two measurements from newborns inpatients and paediatrics outpatients departments from one hospital, and two from emergency rooms and radiography emergency departments from the other hospital); one medical school (n = 5), one official language school (n = 2); one secondary school (n = 1); one general practice (n = 2); one public health centre (n = 1); and three households (n = 4, one smoker's home and two non-smoker's households). Nicotine concentrations for the three field blanks all corresponded to airborne concentrations of less than 0.02 $\mu g/m^3$.

Monitors were left exposed for periods ranging from 7–13 days, since a minimum period of seven days was required to have a valid measure with passive monitors. One trained investigator completed a standard form with data concerning the date and time, placement and removal, exposure area, ventilation and distribution patterns, and distance from the person smoking nearby. The highest air nicotine concentration was found in restaurants, showing a mean of 12.4 $\mu g/m^3$ (10.6–15.0 $\mu g/m^3$). The air nicotine concentrations in a secondary school and in a smoker's household were 9.5 $\mu g/m^3$ and 7.9 $\mu g/m^3$, respectively. In department stores, the average air nicotine concentration was 2.8 $\mu g/m^3$ (range 0.4–6.2 $\mu g/m^3$). ETS exposure in the language school showed a mean nicotine concentration of 2.3 $\mu g/m^3$ (range 1.7–3.0 $\mu g/m^3$). Other results are presented in table 1.

Although these results need to be interpreted within the limitation of having only 31 measurements and a non-random sample, this is the first attempt to obtain an objective measure of ETS exposure in public places in Barcelona. The data may also provide at least an initial insight into the situation in other southern European countries where measurements of ETS exposure are not common. Restaurants showed high concentrations, including two measurements obtained from hospital canteens where the average nicotine concentrations showed no significant difference between smoking and non-smoking areas (15.0 and 11.5 $\mu g/m^3$, respectively). This may reflect a lack of compliance or a weak physical separation between the two areas, and is especially serious since it involves hospitals. Nicotine concentrations in restaurants were found to be double those found in a smoker's household. Other studies have shown higher concentrations of nicotine in workplaces, including restaurants, as compared to smokers' homes[6–8]. Our measurements are consistent with and even higher than those found in other studies where mean concentrations ranged from 2–6 $\mu g/m^3$ in offices and from 3–8 $\mu g/m^3$ in restaurants.[8]

Since all areas in our study were sampled 24 hours a day for at least a full week, concentrations were probably much higher during time of occupancy—that is, when non-smokers, especially children, were exposed. The fact that collection of data was made during the winter means that the results may have been less influenced by open windows. The finding of lower concentrations of nicotine in health centres and medical schools, where several local policies are being put in place, is encouraging.

The results of this study are intended to raise awareness of involuntary exposure to ETS and the need to enforce compliance with legislation. Such legislation already exists in Catalonia, affecting the public transport system, health and education centres, and large department stores, where smoking is not allowed except in designated areas.[9] Smoke-free policies not only protect non-smokers from second hand smoke, they also create an environment that makes it easier for smokers to stop.

Table 1 Concentrations of nicotine recorded in public places in the city of Barcelona

Locations	Sampling time (days)*	Nicotine concentration ($\mu g/m^2$)
Underground (subway) stations (mean)		2.2
Platform	7	0.1
Connection 1†	7	3.8
Connection 2	7	2.1
Connection 3	7	4.1
Coach	12	1.0
Restaurants (mean)		12.4
Main dining room (no division)	7	10.6
Hospital A canteen (non-smoking area)	7	11.5
Hospital A canteen (smoking area)	7	15.0
Large stores (mean)		2.8
Store A, floor 1	7	0.7
Store A, floor 2	7	0.4
Store B, information centre	13	6.2
Store B, hall	13	3.9
Medical school (mean)		0.9
Corridor 1	7	2.1
Corridor 2	7	0.0
Classroom	7	0.1
Cafeteria	7	2.0
Hall	7	0.2
Language school (mean)		2.3
Hall 1	7	3.0
Hall 2	7	1.7
Secondary school (mean)		9.5
Teacher's room	7	9.5
Hospitals (mean)		0.7
Hospital B, newborns inpatients	7	0.0
Hospital B, paediatric outpatients	11	0.2
Hospital A‡, emergency department	7	1.0
Hospital A, radiography department (emergencies)	7	1.6
General practice (mean)		1.1
Doctor's room	7	2.0
Stairs	7	0.4
Public health centre (mean)		3.7
Room	12	3.7
Households, non-smokers (mean)		0.0
House A, living room 1	9	0.0
House B, living room 2	8	0.0
House B, bedroom	8	0.0
Households, smokers (mean)		7.9
House C, living room	7	7.9

*The monitors were left exposed for 24 hours a day.
†All connections where measures were taken from corresponded to different sites.
‡The same hospital where the canteen's measurement were taken from.

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A smoking cessation telephone resource: feasibility and preliminary evidence on the effect on health care provider adherence to smoking cessation guidelines

Physicians have frequent opportunities to intervene with their smoking patients as approximately 70% of smokers see a physician each year.[1] Even brief counselling by a physician significantly improves the rate of smoking cessation according to meta-analyses performed by the Tobacco Use and Dependence Guideline Panel and summarised as "ask, advise, assist, and arrange follow-up" in the Agency for Health Care Policy and Research (AHCPR) guidelines.[2] Despite these evidence based recommendations, physicians identify only about half of current smokers, advise less than half, and assist and arrange follow up with a small minority.[3] There are several explanations for this disparity between physicians' knowledge and their actual behaviour including inadequate training, resource and time constraints, and lack of information on community cessation resources.

Office systems that screen patients for smoking status increase the rate of smoking cessation interventions by health care providers.[4] We hypothesised that providers would be more likely to adhere to the AHCPR guidelines if they could delegate the time consuming steps of *assistance* and *follow up* to a telephone cessation resource.

This pilot study assessed the feasibility of a central telephone smoking cessation resource that would proactively call smokers who gave their provider consent for referral. We also evaluated whether providers would be then more likely to adhere to the smoking cessation guidelines. In a quasi-experimental pre-test, post-test design, a sample of patients seen for any type of visit with a provider in three participating primary care clinics in Vermont were interviewed at exit from the clinic. Only current smokers were asked about their providers' adherence to guidelines. The primary outcome measure was the proportion of current smokers who reported being asked, advised, assisted, and having follow up arranged at baseline and four months after implementation of the resource.

Two hundred and nine patients were referred to the resource from the three clinics over the four month duration of resource availability. We estimated that this represented 20% of the total number of smokers seen at the clinics during this time period. We interviewed 54 smokers at baseline and 111 smokers four months after implementation. After the intervention, rates of asking and advising about smoking were not significantly changed from baseline (table 1). The increase in the proportion of smokers who were offered assistance did not reach significance ($p = 0.052$). There was a significant increase in those who had follow-up arranged (table 1).

Our study demonstrates that a smoking cessation proactive telephone resource is feasible and that providers will refer patients to such a resource. The resource had a contact rate of only 52% of referred current smokers, which we attribute to the resource not having evening calling hours, a significant limitation. Implementation of this proactive smoking cessation telephone resource was associated with improved arrangement of follow up. These preliminary data suggest that further studies of the effect of referral resources on adherence of physicians to guidelines are warranted. Because of the non-randomised design of this pilot study, we cannot attribute improvements in provider adherence solely to the availability of the telephone resource, as provider focus groups, surveys, and training also may have increased adherence to the guidelines. Only a randomised study can address this issue.

Table 1 Adherence of health care providers to smoking cessation interventions

Intervention	Baseline (n=54)	Post-implementation (n=111)	Relative risk Post-implementation *v* baseline (95% CI)
Asked	37 (69%)	71 (64%)	0.9 (0.7 to 1.2)
Advised to quit	29 (55%)*	65 (59%)	1.1 (0.8 to 1.4)
Quit date discussed	5 (9%)	14 (13%)	1.4 (0.5 to 3.6)
Assistance offered	14 (26%)	46 (41%)†	1.6 (1.0 to 2.6)
Follow up arranged	9 (17%)	38 (34%)‡	2.1 (1.1 to 3.9)

*One subject's data missing for this item, n=53.
†p=0.052 versus baseline.
‡p<0.02 versus baseline.
CI, confidence interval

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Ophthalmologists' and optometrists' attitudes and behaviours regarding tobacco cessation intervention

Although health care providers can be effective in motivating and helping patients to quit their tobacco use,[1–7] the potential role of eye care professionals has been under recognised. Several chronic ocular diseases are associated with smoking,[8] including formation of cataracts and age related macular degeneration (a leading cause of blindness).[8 9] As a cardiovascular risk factor, smoking may also play a role in the development of anterior ischaemic optic neuropathy.[10] In addition, smoking may increase the risk of ocular disease from other disorders, such as diabetes, the main cause of blindness in persons 20–74 years of age.[11]