

Perception of the damaging effects of smoking, and brief cessation counselling by doctors

A comparison between native Swiss and immigrants

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Summary

An open prospective study was conducted among the patients visiting an urban medical polyclinic for the first time without an appointment to assess whether the immigrants (who represent more than half of our patients) are aware of the health effects of smoking, whether the level of acculturation influences knowledge, and whether doctors give similar advice to Swiss and foreign smokers.

226 smokers, 105 Swiss (46.5%), and 121 foreign-born (53.5%), participated in the study. 32.2% (95% CI [24.4%; 41.1%]) of migrants and 9.6% [5.3%; 16.8%] of Swiss patients were not aware of negative effects of smoking.

After adjustment for age, the multivariate model showed that the estimated odds of “ignorance of health effects of smoking” was higher for people lacking mastery of the local language compared with those mastering it (odds ratio

(OR) = 7.5 [3.6; 15.8], $p < 0.001$), and higher for men (OR = 4.3 [1.9; 10.0], $p < 0.001$).

Advice to stop smoking was given with similar frequency to immigrants (31.9% [24.2%; 40.8%]) and Swiss patients (29.0% [21.0%; 38.5%]). Non-integrated patients did not appear to receive less counselling than integrated patients (OR = 1.1 [0.6; 2.1], $p = 0.812$).

We conclude that the level of knowledge among male immigrants not integrated or unable to speak the local language is lower than among integrated foreign-born and Swiss patients. Smoking cessation counselling by a doctor was only given to a minority of patients, but such counselling seemed irrespective of nationality.

Key words: immigrants; smoking; smoking cessation; counselling; prevention

Introduction

Switzerland has a high proportion of smokers (32% in 2002). The costs of smoking in Switzerland are high: CHF 1.2 billion annually in direct costs [1] and CHF 8.8 billion in indirect and human costs [2]. Several socio-economic factors influence the rate of consumption, including education, origin and social status [3].

Switzerland also has a high rate of immigration, mainly from Eastern Europe and Africa. Awareness of the health consequences of smoking and willingness to quit may be different in these populations. A relationship between cultural background, health beliefs and smoking habits is reported in the literature [4–11].

Helping smokers to quit is an effective and cost-efficient activity in preventive medicine, but doctors do not engage in it as widely as expected. According to a Swiss study, 88% of smokers are questioned by their family doctor about their to-

bacco use, but only 34% receive clear-cut advice to stop smoking [12]. Highly dependent smokers and smokers with sociomedical problems may be less willing to try to stop than others. The level of integration into local society may also influence the perception of health and willingness to quit. Furthermore, due to communication problems, it is possible that doctors treating immigrants pay less attention to the problems linked with behaviour and dependence, like smoking, and concentrate more on somatic problems.

To tailor smoking cessation counselling to the needs of new immigrants in an industrialised country, it thus seems necessary to collect specific information regarding perceptions of the damaging effects of smoking in different population groups, and doctors' attitudes and advice to these groups.

The aims of the study were to evaluate perceptions of the damaging effects of smoking on health

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among immigrants of different cultural backgrounds, to assess whether acculturation (the process of learning the values, beliefs, norms and traditions of a new culture) influence the percep-

tion of the damaging effects of smoking, and to assess whether doctors give the same amount of advice on smoking cessation to immigrants as to native Swiss.

Method

The study was conducted in an urban university medical outpatient department serving a population with a high proportion (about 50%) of foreign nationals. A smoking cessation clinic was implemented in 1998 and the majority of residents were trained in cessation counselling.

Over a three-month period (July to September 2001), all patients aged 18 years or over visiting the clinic for the first time without an appointment were prospectively included; non-smokers, former smokers and patients with obvious psychiatric co-morbidity were excluded. Before the clinical consultation a dedicated research assistant administered an anonymous questionnaire in one of the main native languages spoken among the clinic's patients (French, English, Serbo-Croat, Albanian, Spanish), which the patients completed in the waiting room. The questionnaire covered general and demographic information (sex, age, country of origin, marital status, educational level, legal status, knowledge of the local language, occupation) and information on smoking habits (number of cigarettes

smoked, time of first morning cigarette, age of starting smoking, knowledge of smoking-related diseases, motivation to stop smoking). If necessary the research assistant clarified questions and helped the patients to answer the questionnaire.

A second questionnaire was administered to the patients after the clinical visit enquiring whether the physician had given advice on smoking cessation.

The doctors working in the clinic were informed that a study was ongoing into the satisfaction and take-home messages the patients seen in the emergency ward retained from the clinical visit, but were not informed of the specific aim of the study since informing the doctors of all the study aims would have introduced a bias. They were requested to complete a questionnaire after each emergency visit, mentioning the reason for the visit and enquiring if advice had been given during its course. The study was approved by the local ethics committee of the Medical Faculty.

Table 1
Gender, age, knowledge of smoking hazard and counselling on smoking cessation related to origin.

Origin	sample size (N [%]) (n = 226)	male (N [%]) (n = 226)	age (mean [sd]) (n = 226)	at least one hazard known (n = 222)	counselling given (n = 219)
Switzerland	105 (46.5%)	46 (43.8%)	33 (13)	94 (90.4%)	29 (29.0%)
Europe	44 (19.4%)	24 (54.5%)	32 (11)	37 (84.1%)	12 (27.9%)
Eastern Europe	27 (11.9%)	19 (70.4%)	34 (13)	12 (44.5%)	10 (38.5%)
Middle East / Africa	37 (16.4%)	28 (75.7%)	30 (10)	23 (67.6%)	12 (32.4%)
Other	13 (5.8%)	7 (53.8%)	33 (8)	8 (61.5%)	4 (30.8%)
All patients	226 (100%)	124 (55%)	33 (12)	174 (78.4%)	67 (30.6%)

Table 2
Univariate and multivariate analysis for ignorance of health hazard due to smoking.

	N (%) of ignorant	OR [95% CI]	adjusted OR (n = 220) [95% CI]
Origin (n = 222) (Immigrant versus Swiss)	38 (32.2%) vs 10 (9.6%)	4.5 [2.1; 9.5]	Not included in model*
Knowledge of local language (n = 221) (Bad or none versus Good)	29 (51.8%) vs 19 (11.5%)	8.3 [4.0; 16.8]*	7.5 [3.6; 15.8]
Length of stay (n = 214) (≤1 year versus >1 year)	17 (48.6%) vs 29 (16.2%)	4.9 [2.3; 10.6]	Not included in model*
Intention to stop smoking (n = 216) (Yes versus No)	17 (21.5%) vs 31 (21.7%)	1.4 [0.7; 2.7]	Not included in model
Has a diagnosis related to smoking (n = 207) (Yes versus No)	10 (23.8%) vs 35 (21.5%)	1.1 [0.5; 2.6]	Not included in model
Degree of dependence (n = 222) (High versus low or medium)	17 (27.4%) vs 31 (27.7%)	1.0 [0.5; 1.9]	Not included in model
Level of education (n = 210) (Compulsory schooling only or less versus more than compulsory schooling)	15 (26.3%) vs 29 (19.0%)	1.5 [0.7; 3.1]	Not included in model
Age (n = 221) (Under 30 versus 30 and over)	18 (17.1%) vs 30 (25.9%)	0.6 [0.3; 1.1]	0.7 [0.3; 1.4]
Gender (n = 222) (Male versus Female)	39 (32.5%) vs 9 (8.8%)	5.0 [2.3; 10.1]	4.3 [1.9; 10.0]

* Factors have not been included in the multivariate model since they were hardly correlated with the "knowledge of local language" variable.

Table 3

Odds ratios of counseling versus no counseling on smoking cessation.

	N (%) with counselling	OR [95% CI]	adjusted OR (n = 204) [95% CI]
Origin (n = 219) (Immigrant versus Swiss) Excluded from multivariate analysis	38 (31.9%) vs 29 (29.0%)	1.1 [0.6; 2.0]	Not included in model
Knowledge of local language (n = 217) (Bad or none versus Good)	18 (32.1%) vs 49 (30.4%)	1.1 [0.6; 2.1]	Not included in model
Length of stay (n = 214) (≤1 year versus >1 year)	10 (27.8%) vs 53 (30.5%)	0.9 [0.4; 1.9]	Not included in model
Intention to stop smoking (n = 216) (Yes versus No)	32 (39.0%) vs 35 (26.1%)	1.8 [1.0; 3.3]	1.6 [0.8; 3.1]
Has a diagnosis related to smoking (n = 207) (Yes versus No)	21 (48.8%) vs 45 (27.4%)	2.5 [1.3; 5.0]	2.5 [1.2; 5.1]
Degree of dependence (n = 217) (High versus low or medium)	27 (35.5%) vs 40 (28.4%)	1.4 [0.8; 2.5]	Not included in model
Level of education (n = 208) (Compulsory schooling only or less versus more than compulsory schooling)	15 (25.0%) vs 47 (31.8%)	0.7 [0.4; 1.4]	Not included in model
Age (n = 218) (Under 30 versus 30 and over)	32 (30.4%) vs 35 (30.4%)	1.0 [0.6; 1.8]	1.0 [0.6; 1.9]
Gender (n = 219) (Male versus Female)	36 (31.0%) vs 31 (30.3%)	1.0 [0.5; 1.7]	0.8 [0.4; 1.6]

Hypothesis

1. Among patients who smoke, those that are less acculturated are more likely to be ignorant of the hazards of smoking.

2. Immigrant patients receive less than half the smoking cessation counselling received by Swiss patients.

Statistics

We needed 91 patients per group to conduct a trial with 80% power to detect a difference of 0.2 of counseling between groups (20% for immigrants versus 40% for Swiss), with a two-tailed alpha risk of 5%.

Univariate analyses were performed by calculating odds ratios (OR) for subjects unaware versus aware of health hazards from smoking (table 2) and people counselled versus not counselled on smoking cessation (table 3), and for a range of risk factors (origin, knowledge of local language, length of stay in Switzerland, intention to stop smoking, gender, age, level of education and smoking habits, presence of a smoking-related diagnosis).

Independent variables with P-value ≤0.2, gender and age were kept to build multivariate models and adjusted OR were calculated.

Cluster analysis

Physicians received different levels of training and this could have an impact on the counselling for smoking cessation. Each physician saw a number of patients and this may introduce a clustering effect. As a sensitivity analysis, we included the physician as a random effect in our model for smoking cessation counselling to take account of any clustering. To estimate each random effect requires a reasonable number of patients per physician so we excluded data for those physicians who saw fewer than 10 patients. We did not carry out this sensitivity analysis for our model for ignorance of health hazard due to smoking because physicians have no effect on this variable – each patient answered this question before the clinical visit.

Statistical analysis were done using Stata 8.2 (Stata-Corp. 2003. Stata Statistical Software: Release 8.2. College Station, TX: Stata Corporation).

Results

During the period July to September 2001, 653 patients visited the clinic for the first time without an appointment. Among them, 394 were excluded from the analysis (388 non-smokers and ex-smokers, and 6 in view of obvious psychiatric comorbidity). From the 259 smokers, 31 (12%) refused to participate, 2 (1%) agreed but refused to answer the first and third questionnaire, and 226 (87%) completed all the questionnaires. The complete response rate was 192/259 (74%), as 34 patients (13%) did not reply to some of the questions needed for the analysis.

Among smokers, 121/226 (53.5%) were immigrants. The other demographic characteristics of the study population are reported in table 1.

Ignorance of the dangers of smoking and acculturation

Among 222 participants who answered the open question about the health effects of smoking (table 1), 38/118 immigrants (32.2% [24.4%; 41.1%]) did not mention a hazard, compared with 10/104 Swiss patients (9.6% [5.3%; 16.8%]).

Univariate analysis showed a significant association of ignorance of smoking hazard with origin (OR = 4.5 [2.1; 9.5], p = 0.001), ability to speak the local language (OR = 8.3 [4.0; 16.8], p <0.001), length of stay (OR = 4.9 [2.3; 10.6], p <0.001) and gender (OR = 4.3 [1.9; 10.1], p <0.001) (table 2). Odds of knowledge of health effects did not differ with motivation to quit smoking, having a smoking-related diagnosis, level of smoking dependence, educational level or age.

For multivariate analysis, calculations were performed on the 220 patients who answered questions relative to “knowledge of local language”, “gender” and “age”. After adjustment for age, non-integration – with poor mastery of the local language as a proxy measure of the degree of integration (adjusted OR = 7.5 [3.6; 15.8], $p < 0.001$) – and gender (adjusted OR = 4.3 [1.9; 10.0], $p < 0.001$) were still independently associated with ignorance of the health hazards of smoking. The “origin” and “length of stay” factors have not been included in the multivariate model since they were highly correlated with the “knowledge of local language” variable.

Counselling on smoking cessation

Among 219 visits where the information was available (from the second patient questionnaire or from the 24 physicians), 67 (30.6% [24.9; 37.0%]) ended with some counselling on smoking cessation. The proportion was similar among immigrants (31.9% [23.8%; 40.1%]) and among Swiss (29.0% [21%; 38.5%]) patients. The hypothesis that immigrants have received less than half the counselling given to Swiss patients can be rejected with a 95% confidence as the lower limit of the 95% confidence interval of the relative risk (RR) is above 0.5 (RR = 1.1 [0.74; 1.65]).

Univariate analysis showed that non-integrated patients (poor mastery of local language) did not receive more counselling than integrated

patients (32.1% versus 30.4%, OR = 1.1 [0.6; 2.1], $p = 0.812$). The nature of the disease prompting the clinical visit influenced the frequency of cessation advice: patients with cardiovascular, pulmonary or ENT disorders received advice more often than patients with disorders to other systems (48.8% vs 27.4%; OR = 2.5 [1.3; 5.0] $p = 0.008$). Further, advice was given more often to patients considering cessation in the near future (<6 months) than to those not intending or unwilling to quit (39.0% versus 26.1%, OR = 1.8 [1.0; 3.3] $p = 0.048$) (table 3).

If we exclude data from the 11 physicians who saw fewer than 10 patients, OR in the multivariate logistic model are 1.4 [0.7; 3.1], 2.1 [0.8; 5.5], 0.8 [0.4; 1.7] and 0.6 [0.3; 1.4] for factors “intention to stop smoking”, “had a diagnosis related to smoking”, age and gender respectively.

If we add the physician as a random effect (using GLLAMM function of Stata 8.2), there is no evidence of between-physician variability in the multivariate model (variance estimate 1.1, standard error 0.87), and ORs are similar: 1.3 [0.5; 3.1], 2.6 [0.9; 7.6], 0.8 [0.4; 1.9] and 0.7 [0.3; 1.7] respectively.

We conclude that there was no cluster effect induced by physicians, and that all the data could be analyzed with the simple logistic model. This model showed that only the diagnosis related to smoking remained significant (adjusted OR = 2.5 [1.2; 5.1], $p = 0.012$).

Discussion

Ignorance of the dangers of smoking and acculturation

Our study demonstrates that a higher proportion of immigrants than Swiss residents are ignorant of the health effects of smoking (32% versus 10%). This is more marked among immigrants from Eastern Europe than among Africans and Asians. This may reflect the fact that many immigrants come from countries where advertising for cigarettes is unrestricted and information on the health effects of smoking is scarce [13, 14], even if many countries in Eastern Europe can be considered industrialised and to have a high level of education.

Another finding is the fact that immigrants with a good knowledge of the local language also have a better knowledge of the health effects of smoking. This confirms the observation that smokers less able to read and understand the local language tend to underestimate the hazards of smoking [15]. The probable explanation is that integrated immigrants have better access to prevention messages from their doctors or the local media if they understand the local language.

Men did not mention the negative effects of smoking more frequently than women, particularly among immigrants. There is no gender dif-

ference among Swiss residents. The difference between men and women in the level of knowledge of the effects of smoking on health may depend on several factors. Although the literacy level of women in developing countries is usually lower than that of men, women are responsible for the health of the whole family, particularly children, and have more contact with paediatricians and family doctors. Moreover, most gynaecologists ask pregnant women about smoking. Women seem to be more sensitive to prevention messages, rely more on social support and are more involved in managing their own health [16].

Length of stay in Switzerland may also influence receptivity to prevention messages. Immigrants with a long-term permit (B: one year, or C: unlimited) are more aware of some negative effect of smoking than immigrants with no permit or in the country as asylum seekers (73% vs 51%). This difference is less marked than the difference in knowledge according to mastery of the French language, probably due to the fact that some immigrants, particularly Africans, already speak and understand French when they arrive in Switzerland.

Integration into local society and mastery of French improve knowledge of the negative effects of smoking. Integration lessens cultural differ-

ences [17]. The more smoking women are integrated, the better they benefit from health information [18]. On the other hand, immigrants tend to copy the attitudes of the society in which they live and the exact impact of integration is difficult to quantify.

Ethnic factors may also play an important role in smoking behaviour. In one study comparing the characteristics of different populations living in the United States, white Americans smoked more and tended to attribute their symptoms to smoking, whereas African-Americans smoked less, expressed less satisfaction with smoking and were more confident of their capacity to quit, while Hispanics and Asians were strongly motivated to stop smoking to protect their children and relatives [19].

Counselling on smoking cessation

The low proportion of intervention in smoking cessation from doctors (30.6%) is disappointing and seems to be lower than in some other surveys, where the rates attain 50–90% [20–22]. Another Swiss study reported that 88% of smoking patients were questioned by their family doctors but only 34% received clear-cut advice to stop [12]. One reason may be that our patients visited the clinic as emergencies, with problems frequently unrelated to smoking, and were seen by the physician for the first time. The chance of being questioned about smoking habits and of receiving advice increases with the length of the relationship between patient and doctor [20, 23].

On the other hand, our study shows that doctors give advice to quit as frequently to immigrants as to Swiss (31.9% and 29.0%). This is in contrast to studies claiming that patients belonging to minorities receive less health advice than members of the resident population [24]. In one study, 49.5% of white American smokers received advice, against 42.9% of African-Americans [23]. In another study, some 80% of white patients remember receiving advice to quit, as against only 64% of African-Americans [25]. Non-Hispanic patients appear to receive advice more frequently than Hispanics [26]. One of the reasons for the similar rate of counselling may be that our clinic is used to take in and care for immigrants and foreign-born patients, who are directed there in emergencies.

Patients were asked about smoking more frequently if they visited the clinic for a cardiovascular, pulmonary or ENT problem. This has been observed in other studies, particularly involving patients with acute cardiovascular disease, stroke, hypertension or respiratory disease, independently of age, gender or number of clinical visits [20, 27].

Much remains to be done until counselling is integrated into the clinical routine, including in emergencies [28–30]. Training of the resident doctors increases the rate of intervention [31]. In a

study conducted in our clinic in 1997, training of the residents increased the level of intervention among regular patients from 68% to 77% and from 27% to 80% for patients seen as emergencies [32]. In a further study comparing residents trained and not trained in smoking counselling, smokers cared for by trained physicians were significantly more motivated to consider cessation and to have long-term success [33]. Physicians who are not confident of their efficacy provide less advice to their patients than others (OR .36) [34]. The confidence of the physicians in his or her efficacy seems to increase with the number of hours of training [32, 35]. Finally, Rigotti and Thorndike even claim that patients who are not asked about their smoking habits may gain the impression that the doctor is overlooking other important questions or items [36].

It has been clearly demonstrated that even simple advice (in form of a “minimal intervention”) increases the chance of abstinence [31, 37, 38] and that the patient’s satisfaction increases if he or she is questioned correctly by the physician [12]. More than half of smokers are satisfied to be offered smoking cessation advice by their family doctor, many feel more confident of their ability to stop and half report that medical advice was of paramount importance in their decision to stop [27].

Limitations

This study involves several limitations: 1) The study population is mainly urban. Nevertheless, the immigrants are referred to our clinic from regions more distant than the local urban area. 2) The number of African and Asian patients is limited, but the comparison with immigrants from Eastern Europe shows significant differences. 3) As the study was conducted among patients visiting the clinic in an emergency, and not in a stable population, the questionnaire could not be validated. 4) The complete response rate was lower than 80% (74%). There is a risk of bias, in that those who were less integrated into Swiss society felt less comfortable about participating and either declined to take part or gave partial answers. 5) A Hawthorne effect [39] may have occurred, but we have minimized its likelihood by blinding residents and patients to the goal of the study. Furthermore, the high level of interest in smoking counselling and management of immigrants may have influenced the attitude of the resident doctors (for the sake of the patients!). 6) This study is purposely limited to patients consulting in an emergency, and may indicate a lower rate of medical interventions than during routine clinical visits. On the other hand, it offers the opportunity to introduce a minimal intervention in less favourable circumstances. The fact that an intervention was possible in a large proportion of patients is encouraging.

Conclusion

Migrants are less aware of the health consequences of smoking than Swiss residents, and the greater the knowledge of the local language, the greater the awareness of negative effects on health. Accordingly, continuous efforts to improve the integration of immigrants, and in particular to improve their mastery of the local language, are important. Women seem to be more sensitive to health arguments, and could therefore be the vector in transmitting health information to their relatives.

Physicians give cessation advice with similar frequency to Swiss and foreign patients but should be more active in counselling their patients about smoking. If necessary, they should have information in foreign languages to offer to their patients. Further training of resident doctors is mandatory. Requesting information on smoking habits should

be integrated into clinical routine, including in emergencies.

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