Family Practice

The impact of routine advice on smoking cessation from family physicians

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Cigarette smoking continues to be a major health problem. Therefore, physicians have been asked to advise all their patients on the hazards of smoking. A controlled trial was undertaken to measure the impact of family physicians' advice to cigarette smokers during a routine office visit. No significant differences were found in the three measures used to determine outcome — desire to stop smoking, an attempt to stop and success in stopping — between the control and intervention groups. These results are discussed in relation to the health belief model, and suggestions are made on how to increase the impact family physicians could have on smoking cessation in their practices.

La cigarette continue d'être un problème de santé majeur. En conséquence, on a demandé à des médecins d'informer leurs patients des dangers du tabagisme. Une étude de contrôle a été entreprise afin de mesurer l'influence des conseils prodigués aux fumeurs par le médecin de famille au cours d'une visite de routine. Aucune différence n'a été retrouvée entre le groupe cible et un groupe témoin dans les trois mesures utilisées pour déterminer les résultats, soit le désir de cesser de fumer, une tentative d'arrêter et l'arrêt réussi. Ces résultats sont discutés en rapport avec le modèle de souci pour la santé, et des suggestions sont offertes en vue d'augmenter l'influence que pourraient avoir les médecins de famille dans leur pratique sur l'abandon de fumer.

The World Health Organization has stated that cigarette smoking is a major preventable cause of ill health and premature death.[1] The literature abounds with directives to physicians to give advice on smoking to all their patients, assuming their influence is both powerful and beneficial.[2-5] Unfortunately, only a few studies have tried to measure this influence,[6-11] and they have varied in both methodology and results. Russell and colleagues[6] conducted a controlled trial comparing a control group of subjects who were only asked if they smoked, a second control group who completed a questionnaire on their smoking habits, and two "advice"-intervention groups. They found that 5.1% of the subjects who were given advice and a pamphlet and 3.3% of those who were given advice only had stopped smoking by 1 month and were still not smoking at 1 year, compared with 0.3% and 1.6% of the control subjects ($P < 0.001$). On the basis of these findings Russell and colleagues suggested that primary care physicians take the time to give advice on cigarette smoking to all their patients during routine office visits. Their study was done in Britain; we felt it was important to conduct a similar trial in Canada before adopting this practice on a regular basis. The purpose of our randomized controlled trial was to measure the effect of advice on smoking given routinely by physicians in urban Canadian family practice.

Method

Patients were entered in our study between Sept. 5 and Nov. 8, 1979 at the Ottawa Civic Hospital's family medicine centre, a family practice teaching unit of the University of Ottawa staffed by 5 part-time physicians and 22 residents. Patients are assigned to either a staff physician or a resident as they are admitted to the practice, and are generally given continuing care by this physician. All of the physicians participated in our study. Only two of them were cigarette smokers.

Every patient over 11 years of age (including smokers, exsmokers and nonsmokers) who attended the centre during the entry period completed a questionnaire on their present and past smoking habits while waiting to see their physician. Patients who smoked only cigars or a pipe and those who were exsmokers or nonsmokers were excluded from the study. The cigarette smokers (defined as those who smoked at least one cigarette a day) were randomly assigned to a control or one of three intervention groups by a nurse, who drew an envelope containing the assignment instructions for each patient before she directed the patient to the physician's office. The patients in the intervention groups discussed their answers to the questionnaire with their physician at the beginning of the office visit. Also, they received advice about cigarette smoking, and a large round red label saying "SMOKER" was put on their charts. The physicians were instructed to give the advice in the manner they thought would be most effective for each patient. If the patient was assigned to the control group the questionnaire was not discussed

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with the physician, and the patients did not receive advice about smoking unless the physician felt it was unethical to withhold the advice.

The three intervention groups varied in the following ways: the first was to receive advice on only one occasion, the second was to receive advice on every subsequent visit as well for the next year, and the third was given a pamphlet entitled "Excuses, Excuses". The second group was identified by an A on the smoker label on their chart. However, because the A was not readily visible it is unlikely that this group received advice more than once. Therefore, we combined this group with the first group for analysis of the results.

Fifty charts were randomly selected to assess the degree of compliance by the physicians. The smoker sticker was on 47 of the charts. Since the study protocol required the physician to attach the sticker to the patient's chart during the discussion on smoking, the presence of the sticker suggested that these patients received advice. On the other hand, the physician may have attached the sticker after the patient left and may not have given advice on smoking. However, since the physicians were not told that their charts would be checked, this is unlikely. The nurses were very helpful in ensuring that the study protocol was maintained.

The smokers were mailed similar questionnaires in February and October 1980 to determine their smoking status during the two follow-up periods. A trained interviewer made three attempts to contact the nonrespondents by telephone.

The data from the questionnaires were read directly onto the computer file. Checks for consistency were made, then the data were analysed with the use of the Statistical Package for the Social Sciences.[12]

Results

Participants

There were 2002 questionnaires handed out during the entry period of the study. Although only three (0.1%) patients refused to answer the questionnaire, another 78 (3.9%) questionnaires had to be rejected because they were illegible or uninterpretable. Of the patients presenting to the family medicine centre 36% were cigarette smokers. The age/sex distribution, duration of cigarette smoking, and proportions who had tried to stop smoking during the previous year and who said they wanted to stop smoking at the time of entry to the study were similar in the control and intervention groups. Most of the smokers (77%) had been smoking for more than 5 years, and 28% had tried to stop smoking during the previous year. Approximately two thirds (63%) of the smokers said they wanted to stop smoking.

Results of intervention

Three measures were used to evaluate the impact of advice on smoking given routinely by physicians: desire to stop smoking, an attempt to stop and success in stopping. Only the responses of the participants who were still smoking at the end of both follow-up periods were used to determine whether the effectiveness of the

Table I—Status of respondents at end of 5- and 12-month follow-up periods

Status	No. (and %) of patients given		
	Questionnaire (n = 187)	Questionnaire and advice (n = 345)	Questionnaire, advice and pamphlet (n = 159)
At 5 months			
Total respondents	145 (77.5)	258 (74.7)	123 (77.4)
Attempted to stop smoking	37 (25.5)	52 (20.2)	30 (24.4)
Successfully stopped smoking	21 (14.5)	26 (10.1)	20 (16.3)
At 12 months			
Total respondents	128 (68.4)	229 (66.4)	94 (59.1)
Attempted to stop smoking	76 (59.4)	127 (55.5)	54 (57.4)
Successfully stopped smoking	15 (11.7)	24 (10.5)	12 (12.8)
Had stopped smoking at 5 months and had not resumed smoking at 12 months	4 (3.1)	7 (3.1)	4 (4.3)

Table II—Desire to quit smoking of participants who were smoking at end of both follow-up periods

Outcome	No. (and %) of patients given		
	Questionnaire (n = 81)	Questionnaire and advice (n = 144)	Questionnaire, advice and pamphlet (n = 62)
No change in desire to stop smoking throughout year			
Didn't want to stop	17 (21.0)	29 (20.1)	18 (29.0)
Did want to stop	43 (53.1)	75 (52.1)	29 (46.8)
Change in desire to stop smoking	21 (25.9)	40 (27.8)	15 (24.2)
No changed to Yes at 5 and 12 months	4 (19.0)	10 (25.0)	1 (6.7)
Yes changed to No at 5 and 12 months	1 (4.8)	10 (25.0)	3 (20.0)
No change	16 (76.2)	20 (50.0)	11 (73.3)

advice was reflected in a change in the patient's desire to stop smoking. Patients were considered as having tried to stop smoking if they had not smoked for at least 1 day during the follow-up period. Such patients included both those who had resumed smoking and those who had not. Patients were considered to have been successful in stopping if they had stopped smoking during the follow-up period and were still not smoking when they answered the follow-up questionnaire.

Only 76% of the participants completed the 5-month follow-up questionnaire and 65% the 12-month follow-up questionnaire, despite intensive efforts to trace nonrespondents (Table I). Most of the nonrespondents had moved or were not in the city at the time for other reasons.

We found no statistically significant differences ($P < 0.05$) in the outcomes of the three groups (Tables I and II). Although the intervention groups were given advice or advice and a pamphlet the proportions of patients who attempted to stop smoking and successfully stopped were not significantly different from those of the control group. The proportion who said they were not smoking at the end of either the 5- or the 12-month follow-up period, including those who stopped just before the end and might start again, was similar (10% to 15%) for all the groups. Only 3% to 4% of the participants had stopped smoking at the end of both follow-up periods, considerably less than the 10% to 15% who had stopped at only one of those times.

Most of the participants (75%) did not change their desire to stop or not to stop smoking during the follow-up year (Table II). We could not determine if the physicians' advice had any impact on the group who did change their desire because the numbers who did so were small. There was no consistent trend, other than the fact that most of the smokers changed their minds more than once in the follow-up year.

In the 12-month follow-up questionnaire all the participants were asked if they thought that cigarette smoking was harmful to their health. Table III shows that there was a high level of awareness in all three groups.

Discussion

The results of our study suggest that giving routine advice about cigarette smoking may not be the most effective way for a family physician to promote nonsmoking.

Both Russell and colleagues' study[6] and ours showed that 3% to 5% of the groups who received advice from their physician stopped smoking for more than 7 months. The different conclusions from the two studies were caused by the differences between the control groups. Russell and colleagues' control groups had very low long-term rates of quitting (0.3% and 1.6%); they found that routine advice from physicians was effective in motivating more patients to try to stop smoking but did not increase the rates of success. Similar proportions of patients in the control groups of the two series were trying to stop smoking, but more of our patients were having long-term success. One can only speculate on the reasons for this difference, but there has certainly been a change in the factors affecting smoking cessation, because the proportion of adults who smoke has decreased in the past several years.

The modified health belief model, as summarized by Jenkins,[13] proposes a framework for understanding the factors required for individuals to modify their behaviour, such as stopping smoking. First, new knowledge has to be integrated into their existing beliefs. Knowledge that is personally threatening is thought to be more likely to motivate an attempt to change one's lifestyle. The individual must also have the skills to produce a change; these can be derived from both internal and external resources.

In light of the health belief model it is not surprising that we found that physicians' advice on smoking had no impact beyond that seen in the smokers who only filled in a questionnaire. Most of the participants were aware that cigarette smoking was harmful, and the physicians were probably only telling them what they already knew. The participants did not, in most cases, have symptoms or a disease related to smoking; therefore, the physicians' advice was given without the benefit of an important motivating factor. Moreover, one can imagine that, for some people, advice from their physician to stop smoking would have been a negative factor — just another attack on a habit they could not or would not change.

Many of the smokers in our study may have lacked the resources to permanently change their behaviour. Approximately 50% of the participants stopped smoking for at least 1 day, but only 3% were able to stop for at least 7 months. Advice from a physician to stop smoking does not add to the individual's resources to combat a long-standing habit that has been firmly incorporated into his or her lifestyle.

Table III—Awareness at end of 12-month follow-up period of the effects of cigarette smoking on health

Response	No. (and %) of patients given		
	Questionnaire (n = 128)	Questionnaire and advice (n = 229)	Questionnaire, advice and pamphlet (n = 94)
Harmful	119 (93.0)	198 (86.5)	82 (87.2)
Not harmful	7 (5.5)	25 (10.9)	9 (9.6)
No response	2 (1.6)	6 (2.6)	3 (3.2)

Conclusions

Our study suggests that family physicians should not rely solely on a few words of advice during a routine office visit to promote nonsmoking. The smoker may need more assistance when he or she decides to quit. Self-help kits, referral to local smoking cessation programs or continuing follow-up is usually available. Further research needs to be done in the primary care setting to determine the type and format of educational material that will be most effective in promoting smoking cessation. A better understanding of when and how physicians' advice is most effectively given and of the nature of support systems to help individuals change their behaviour is also necessary before a significant

impact on the pattern of smoking can be achieved in the physician's office.

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References

1. Controlling the smoking epidemic. Report of the WHO expert committee on smoking control. *WHO Tech Rep Ser* 1979; 636: 7–8
2. ROSEN C, ASHLEY MJ: Smoking and the health professional: recognition and performance of roles. *Can J Public Health* 1978; 69: 399–406
3. RUSSELL MAH: Cigarette dependence: II — doctor's role in management. *Br Med J* 1971; 2: 393–395
4. Controlling the smoking epidemic. Report of the WHO expert committee on smoking control. *WHO Tech Rep Ser* 1979; 636: 70
5. HORN D: An approach to office management of the cigarette smoker.Proceedings of the National Forum on the Office Management of Smoking Problems.Formal recommendations. *Dis Chest* 1968; 54: 203
6. RUSSELL MAH, WILSON C, TAYLOR C, BAKER CD: Effect of general practitioners' advice against smoking. *Br Med J* 1979; 2: 231–235
7. MAUSNER JS, MAUSNER B, RIAL WY: The influence of a physician on the smoking of his patients. *Am J Public Health* 1968; 58: 46–53
8. BURNUM JF: Outlook for treating patients with self-destructive habits. *Ann Intern Med* 1974; 81: 387–393
9. PORTER AM, MCCULLOUGH DM: Counselling against cigarette smoking. A controlled study from a general practice. *Practitioner* 1972; 209: 686–689
10. WILLIAMS HO: Routine advice against smoking. A chest clinic pilot study. *Practitioner* 1969; 202: 672–676
11. SCHWARTZ JL: A critical review and evaluation of smoking control methods. *Public Health Rep* 1969; 84: 483–506
12. NIE NH, HULL CH, JENKINS JG, STEINBRENNER K, BENT DH: *Statistical Package for the Social Sciences*, 2nd ed, McGraw, New York, 1975
13. JENKINS DC:Diagnosis and treatment of behavioral barriers to good health. In LAST JM (ed): *Maxcy-Rosenau Public Health and Preventive Medicine*, 11th ed, ACC, New York, 1980: 1095–1112

Physician as protector

The patient, who may mistrust his own parents, sons and relations, should repose an implicit faith in his own physician, and put his own life into his hands without the least apprehension of danger; hence a physician should protect his patient as his own begotten child.

— Sushruta (5th cent.? BC)