Do you smoke?

Trainee intern GP project

Sarah Cooper, Abigail Lynch, Rebecca McNearnie, Richard Smith, Karen Tsui

(NZFP 2002; 29:160–171)

Introduction

Tobacco smoking is a major health issue in New Zealand and causes the premature death of an estimated 4 700 New Zealanders per year.[1] A Ministry of Health *Tobacco Facts 2001* publication revealed that in 2000, one in five Europeans (21.9%), around one in three pacific peoples (33.9%) and one in two Mäori (49.3%) were cigarette smokers. These statistics illustrate the high smoking prevalence in the general population (estimated among those aged 15 years and over at 25 per cent[1]), and the fact that smoking is a major public health issue. As such, New Zealand doctors have a vital role to play in the education and implementation of smoking cessation schemes and the follow-up of such programmes.

General practitioners are the primary health care providers in New Zealand and therefore have a vital role in health prevention. And in this case addressing smoking issues with their patients and raising awareness of the effects of tobacco smoking and measures that can be taken to aid in smoking cessation. Motivational interviewing and the state of change model are often proposed as useful techniques to utilise when addressing issues of smoking cessation (Appendix 1). We were interested as part of our survey to address whether these are routinely used by general practitioners in smoking cessation consultations.

Motivational interviewing

The goal of motivational interviewing is to elicit from the patient their reasons for concern and their own arguments for change. The responsibility is left with the individual – but the therapist/counsellor can still have a large influence over whether or not change takes place.

The Can Quit guideline is a good example of using motivational interviewing to implement smoking cessation (Appendix 2). This easy to use guide gets patients to identify where they are on the state of change model, thus enabling the GP to empower the patient to change, using a variety of techniques such as providing information and choices.

Aim

The aim of our study is to determine if smoking and its cessation is raised by general practices and what general practices are doing to aid in cessation.

In addition, we wanted to look at ways in which general practices were using the state of change model and motivational interviewing to affect change in their patients' smoking status.

Hypothesis

GPs do not adequately address the issue of smoking or smoking cessation with their patients.

Smoking is an addiction that not only affects the individual but also has the potential to affect work colleagues and those with whom the person lives. There is a large volume of New Zealand smoking data (as highlighted in our literature review), yet despite this information and the availability of literature and smoking cessation tools (e.g. Quitline, Nicotine patches) we believe the issue of smoking is inadequately raised as part of the normal GP consultation. We feel this is largely due to time restrictions, and although preventative medicine should routinely be incorporated into a GP consultation we acknowledge this is not always possible.

We thought that when the issue of smoking cessation is raised in a consultation, GPs use motivational interviewing techniques appropriately.

Method

A written questionnaire was developed to investigate smoking cessation practices in general practice (Appendix 3). This was chosen as it was an efficient way to collect data and patients could fill in the questionnaire while they waited to see their doctor.

The questionnaire was introduced with a paragraph explaining the purpose of our study. We were careful to state that no identifying data would be collected, that they were confidential, that filling it out was optional and would not affect patient care.

Demographic data was collected on sex, age and ethnicity to enable us to compare our data with the national statistics. Information was collected on the current smoking practices of the patients, if the issue of quitting had been raised and the practice's approach to aiding smokers in quitting as well as the patient's attitudes regarding being asked about their smoking. To be able to put our patients into the state of change model, smokers were asked to place them-

Most of those killed by tobacco are not particularly heavy smokers, but most started smoking as teenagers

selves into whether they were not thinking about quitting, thinking about quitting, preparing to quit or trying to quit. We used these terms because they are easier to relate to than words like 'pre-contemplation'.

Tick boxes were chosen as the format of the survey to keep the survey simple and to make collected data easy to analyse. The questionnaire was kept to a maximum of one page, as people were more likely to complete it.

Once a basic draft of the questionnaire was available, we asked a member of the general practice department and several colleagues to review it and give opinions/suggestions. This was very useful as these people were neutral and were able to offer a new perspective.

Five trainee interns attached to practices in Wellington, Raumati Beach, Nelson, Palmerston North and Auckland surveyed their respective practices. The receptionist was asked to hand a questionnaire to 50 consecutive patients aged 15 years or over. This was the cut-off age suggested in the guidelines for smoking cessation.[1] Non-smokers were asked to take part in the survey so we are able to compare the demographic features of the sample.

Data collected was entered into an Epinfo 2000 database. Queries and statistical analysis were also performed in Epinfo. Graphs were plotted in Microsoft Excel.

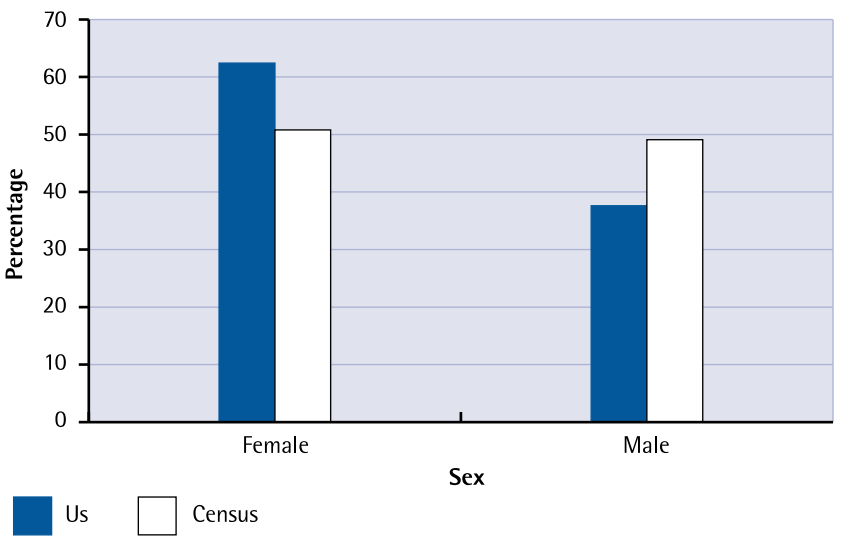
Literature review

We performed a literature review in order to gain some current New Zealand smoking-related health statistics and to also establish the benefits or otherwise of stopping smoking. We were also interested to find information about smoking cessation programmes and the effectiveness of such interventions.

The facts

- Smoking causes the premature death of an estimated 4 700 New Zealanders per year.[1]
- Nearly half of these deaths occur in middle age (35–69 years).[2]
- Most of those killed by tobacco are not particularly heavy smokers, but most started smoking as teenagers.[2]
- Smoking kills one in two of those who continue to smoke past age 35.[3]
- Those who die from smoking die an average of 14 years early.[1]
- It is estimated that 31% of Mäori deaths are caused by tobacco use.[2]
- Environmental tobacco smoke (second-hand smoke) is a Class A carcinogen. Exposure of children to second-hand smoke can cause middle ear effusion,[4] increases the risk of serious lower respiratory tract infections by 60% in the first year of life,[5] increases the frequency and severity of asthma episodes,[6] and is a risk factor for induction of asthma in asymptomatic children.[7]

Figure 1. Proportion of males to females in our study versus 1996 Census



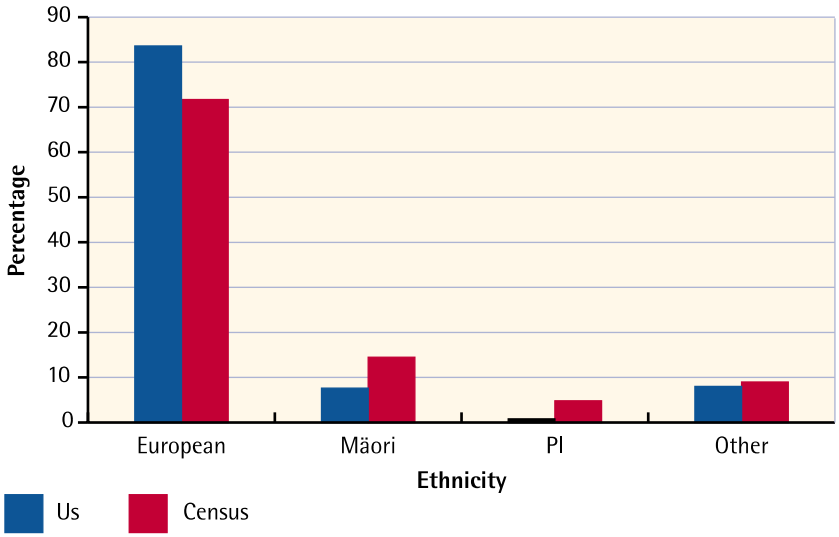
Key points

- Tobacco smoking is a major health issue in New Zealand and causes the premature death of an estimated 4 700 New Zealanders per year.
- The aim of the study was to determine if smoking and its cessation is raised by GPs and what they are doing to aid cessation.
- 88.3% of smokers were asked about their smoking habits, but only 56% were then further questioned about giving up smoking.
- The study highlights areas where GPs may benefit from further education in motivational interviewing.

Benefits of smoking cessation

- It is beneficial to stop smoking at any age, but the earlier the better.[3]
- Smoking cessation results in immediate benefits at all ages. Ex-smokers have fewer days of illness, fewer health complaints, and view themselves as healthier.[8]
- After 10–15 years of abstinence, the risk of dying almost returns to that of people who never smoked.[9]
- The risk of heart disease decreases by half after one year of abstinence from smoking. The risk of a major coronary event reduces to the same level as a non-smoker within five years.[11] In those with existing heart disease, cessation reduces the risk of recurrent infarction or death by 50%.[10]
- Women who stop smoking before or during the first trimester of pregnancy reduce risks to the conceptus to a level comparable with those women who have never smoked.[10]

Figure 2. Ethnicity distribution, our study versus 1996 Census



Approximately 25% of low birth weight births could be prevented by cessation during pregnancy.[10]

- The average weight gain of 3kg and the temporary psychological effects of quitting are far outweighed by the health benefits.[12]

Smoking cessation programmes

Cross-sectional studies indicate that 90% of former smokers used individual methods rather than organised programmes to help them quit.[13] However, formal cessation programmes play a number of important roles:

- They tend to be utilised by more heavily addicted smokers who have made multiple quit attempts.
- For the individual smoker, taking part in a structured programme increases the likelihood of successfully becoming a non-smoker for any given quit attempt.
- They take the pressure off the health care system by reducing or removing the need for multiple follow-up visits.

The effectiveness of intervention by a health professional

- A Cochrane review of 16 randomised trials found simple advice from doctors had a significant effect on cessation rates (odds ratio for quitting 1.73; 95% confidence interval 1.47-2.02).[14]
- When trained providers are routinely prompted to intervene with people who smoke, they achieve significant reductions in smoking prevalence (up to 15% cessation rates compared with 5–10% in non-intervention sites).[10]
- Doctors and other health professionals using multiple types of intervention to deliver individualised advice on multiple occasions produce the best results. Frequency and consistency of interventions over time are more important than type of intervention.[10]

Consumer satisfaction

- When smokers in a clinic implementing a comprehensive tracking and follow-up system for smokers were asked about their response to the programme, 75% were more satisfied with their overall care because of the stop-smoking efforts.[15]

Cost-effectiveness of smoking cessation

- Erschoff et al[16] found that women in a Health Maintenance Organisation (HMO) given access to a

Figure 3. Gender breakdown of smoking practices

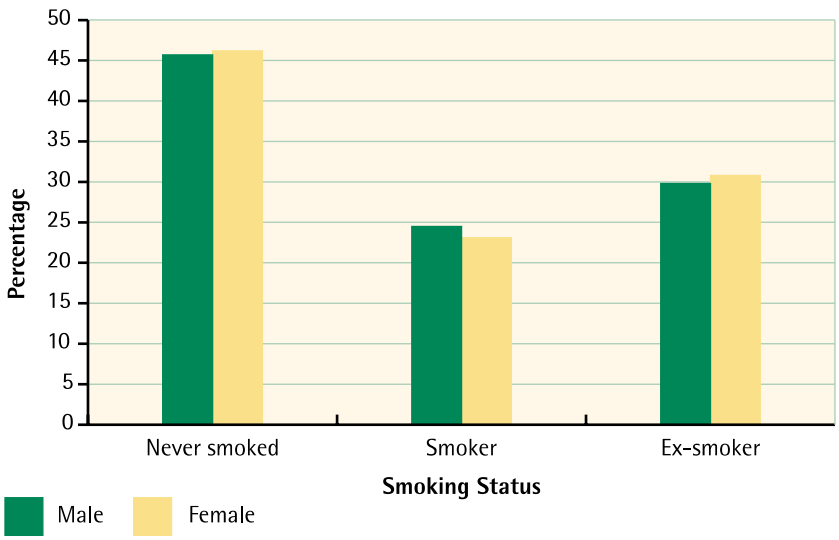


Table 1. Percentage of non-smokers, smokers and ex-smokers: male versus female.

	Male	Female
Never smoked	45.7%	46.2%
Smoker	24.5%	23.1%
Ex-smoker	29.8%	30.8%

self-help programme were more likely to achieve cessation for most of their pregnancy (22.2% v. 8.6%), and that this had impacted favourably on pregnancy outcomes, and generated cost savings. The HMO saved approximately $3 for every $1 spent on the self-help programme.

- Multiple studies have evaluated the cost-effectiveness of various smoking cessation interventions. Puget Sound Group Health Cooperative smoking cessation interventions cost less than US$1 000 per year of life saved.[10] For comparison, cost estimates for the treatment of moderate hypertension and drug therapy for hyperlipidaemia are approximately US$10 000 and US$60 000 per year of life saved, respectively.

Results

We had a 100% response rate. Our sample size was 250.

We compared our collected demographic data to the 1996 national census data.

In our sample, 62.4 % were females and 37.6 % were males. This was compared to 50.8% of females and 49.1% of males in the 1996 national census data (see Figure 1).

Figure 4. Smoking practices within different ethnic groups

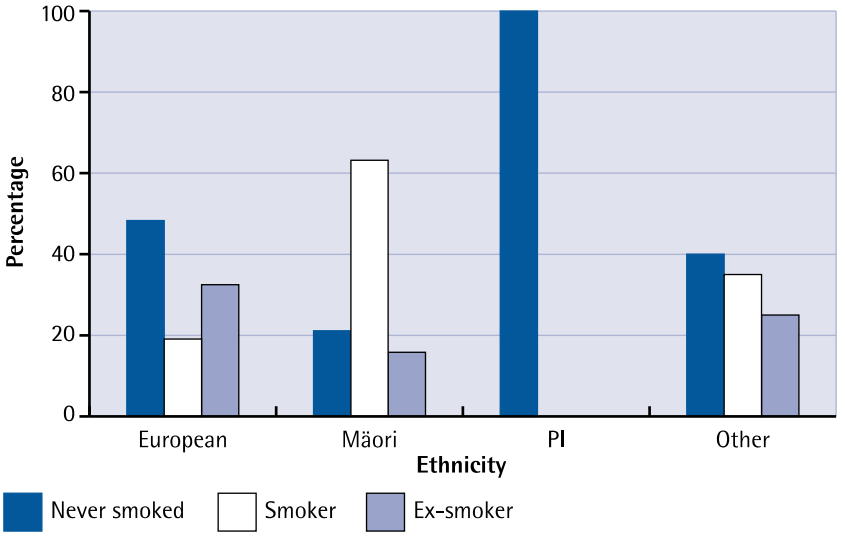


Table 2. Percentage of non-smokers, smokers and ex–smokers by ethnic group

	Maori	NZ European	Pacific Islander	Other
Never smoked	21.1%	48.3%	100%	40%
Smoker	63.2%	19.1%	0	35%
Ex-smoker	15.8%	32.5%	0	25%
TOTAL	100%	100%	100%	100%

Our sample was made up of 7.6% of Mäori, 83.6% of NZ European, 0.8% of Pacific Islander and 8% of Others. This was compared to 14.5% of Mäori, 71.7% of European, 4.8% of Pacific Islanders and 9% of Others as stated in the census (see Figure 2).

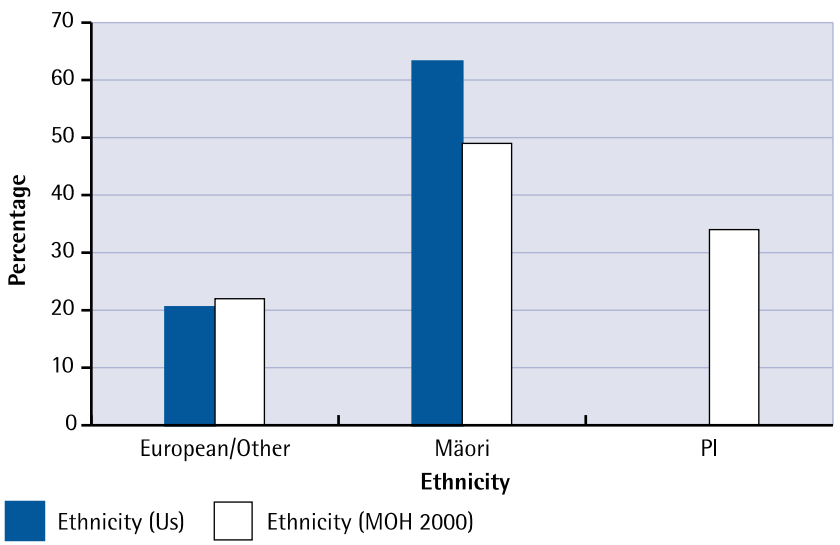
Of our sample, 35.4% said they were non-smokers, 16.2% current smokers and 32.5 % ex-smokers.

Of all the female responders, 23.1% were current smokers compared to 24.5% of the male responders (see Table 1 and Figure 3).

To compare our smoking statistics between different ethnic groups (see Table 2 and Figure 4) with the national data from the Ministry of Health 2000, we combined the percentages of smokers in the subgroups 'NZ European' and 'Other'. 20% of European/others and 63.2% of Mäori are smokers in our study compared to 22% and 49% Ministry of Health study respectively. No Pacific Islanders in our sample are current smokers compared to 34% in the Ministry of Health study (see Figure 5).

We broke down the smokers in our sample into age group catego-

Figure 5. Ethnicity distribution of current smokers: our study versus Ministry of Health (2000)



ries with reference to the categories used by the Ministry of Health, that is, 15–24 years, 25–34 years, 35–54 years, and 55+ years (see Table 3).

Figures 6 and 7 show these figures compared to the Ministry of Health 2000 data.

Of all the people who have smoked in their lives (current smokers and ex-smokers) 47.4% have quit for years, 9.6% have quit for weeks or months, 11.1% are not thinking about quitting, 15.6% are thinking about quitting, 8.1% are preparing to quit and 8.9% are trying to quit.

Table 3. Age of current smokers

Age Group	15–24	25–34	35–54	55+
Male	26.1%	34.8%	26.1%	13%
Female	16.7%	36.1%	30.6%	13.9%

We integrated the status of smokers and ex-smokers into the state of change model. We defined patients who had quit for one year or more years as 'permanent exit'. All ex-smokers who had not smoked for weeks or months were defined as 'maintenance'. Smokers who were not thinking about quitting at all were defined as 'pre-contemplation' and who were thinking about quitting as 'contemplation'. Smokers who were preparing to quit were defined as in 'determination' and those who were trying to quit in 'action'. Figure 8 illustrates the proportion of people in these different stages.

To obtain a clearer picture on patients who were still within the wheel of change, we discarded those patients who had quit for one or more years, that is, patients who had exited permanently. Of the remaining patients, 20% are in the stage of pre-contemplation, 29.2% are in contemplation, 15.3% are in determination, 16.7% are in action and 18.1% are in maintenance. Figure 9 illustrates this.

Of all the current smokers, 88.3% were asked by their GP if they smoked. Of those, only 56% were asked about giving up.

When asked what GPs did to help our patients to give up smoking, 31.8% of the current smokers said their GP did nothing at all, 43.3% said their GPs talked to them about smoking and/or ways to quit, 9.1% were given written information. No smokers were helped to come up with a plan to quit and 15.9% said their GPs stayed involved and interested. Figure 10 illustrates this.

When asked whether their GP helped them quit, 20.8% of ex-smokers said their GP helped and the remaining 80% said they had no help from their GP.

Of all the ex-smokers who said their GP helped them quit, 46.7% were talked to about smoking and/or ways to quit, 13.3% who were given written information. 13.3% said their GP helped them come up with a plan and 26% said their GP had stayed involved and interested (see Figure 11).

Figure 6. Age distribution of male smokers: our study versus Ministry of Health (2000)

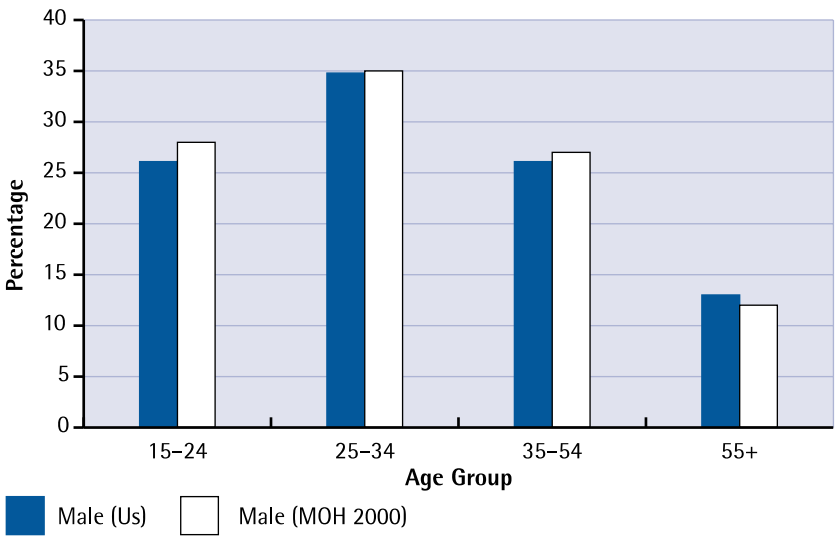


Figure 7. Age distribution of female smokers: our study versus Ministry of Health (2000)

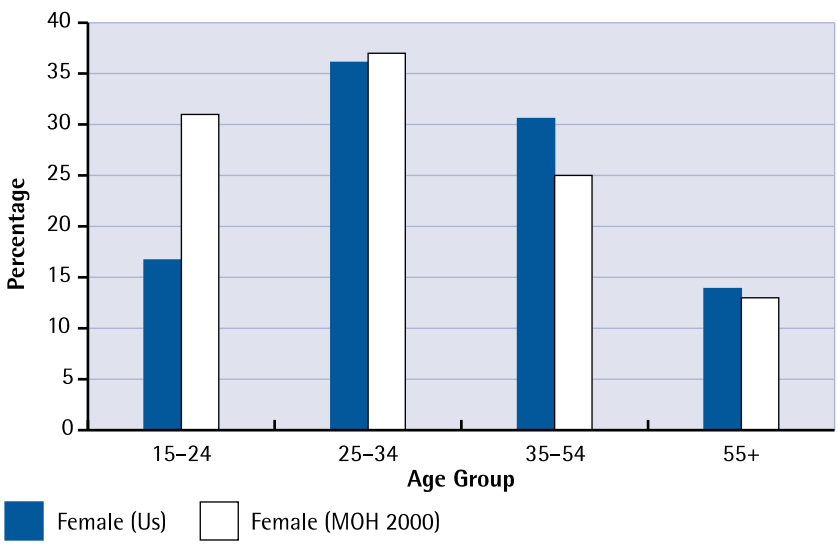


Figure 8. State of change

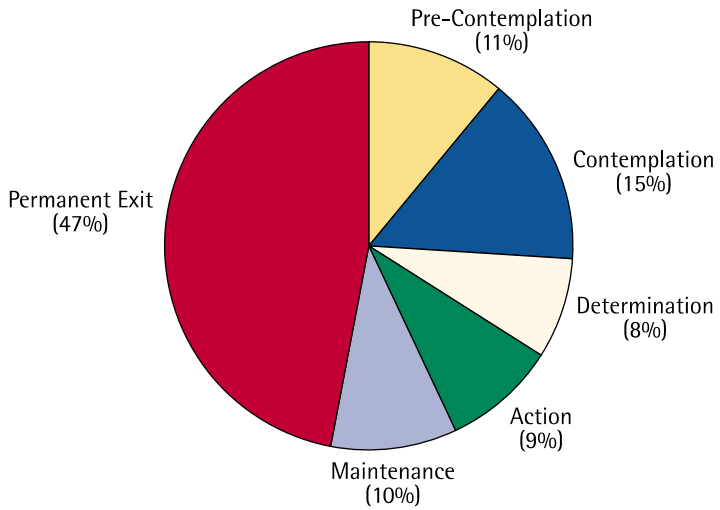
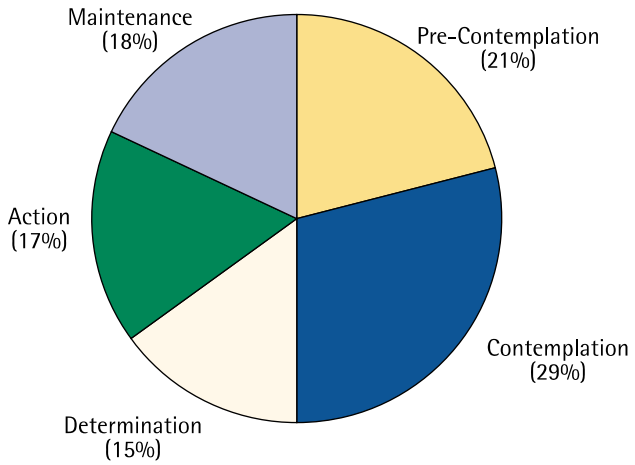


Figure 9. Circle of change



Anecdotal evidence

Based on what we observed at our practice attachments:

- All but one of the practices had visible anti-smoking posters and pamphlets around.
- All but one of the GPs were observed asking about smoking and implementing smoking cessation using motivational interviewing.

Discussion

One of the most interesting results to come out of this study was that 88.3% of smokers were asked about their smoking habits, but only 56% were then further questioned about giving up smoking. This indicates that most general practitioners raise the issue of smoking status with their patients, however a significant number are not adequately following up this question by asking the patient if they have considered giving up. Reasons for this may include:

a) time restrictions of a general practice consultation;
b) GPs not feeling adequately equipped to deal with patients wanting to stop smoking;
c) the GP feeling that if the patient was wanting to discuss their smoking status that they would facilitate further discussions;
d) the GP feeling that they had adequately dealt with smoking status and there was no need for further discussions with the patient;
e) there is also the chance that patients have not correctly remembered the consultation where smoking status was raised.

One disadvantage of our survey was that we did not ask non-smokers or ex-smokers to fill out whether they had been asked by their GP about their smoking status. Such results would have been interesting to compare with smokers as it is possible that the issue of smoking status is only raised by the GP when medical issues arise that may be directly attributed to a patient's smoking.

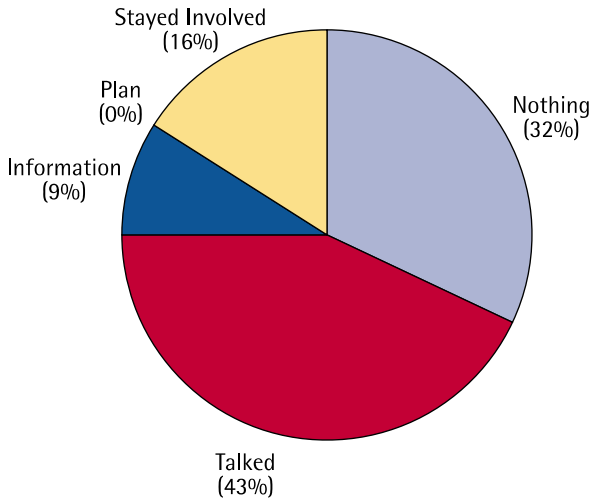
Of those smokers who were asked about giving up it is alarming that 31.8% of these patients' GPs did nothing and the question was obviously not adequately followed up. This highlights the need for GPs to ask the right questions in a consultation and then act on this. 43.3% said their GPs talked to them about smoking and/or ways to quit, and this, from our results from ex-smokers, was shown to be the most popular and indeed effective method for assisting patients in stopping smoking. Also of concern is the fact that no GPs provided plans for patients to quit, and perhaps this needs to be addressed by GP educators as an action plan is seen as a vital element to smoking cessation. We acknowledge that action plans may have been provided by other sources (e.g. Quitline) with which the GP may have helped the patient get in contact.

When we compared our results with the state of change model and categorised our patients into the various categories of pre-contemplation, contemplation, determination, action, maintenance and permanent exit (for which we used the data of people who had been ex-smokers for one or more years), it was encouraging to see the number of patients who are in the permanent exit category (47.4%). The next most common category from our results is the contemplation stage (15.6%), and it is in this phase that GPs have a vital role to play to assist and empower the patient to move into the next

stage of determination to stop smoking. In fact GPs have an important role to play in each stage of the cycle of change: including the permanent exit phase and maintenance phase where they can stay involved and interested about the patient's smoking cessation and encourage the patient in their actions.

The ex-smokers whose GP assisted in their smoking cessation was 20.8%. When these patients were asked what their GP did, the majority (46.7%) stated that their GP talked to them about their smoking. This is interesting and encouraging to realise that patients obviously listened and put into action what their GP had discussed with them and this assisted them to stop smoking. Another important factor that helped patients stop smoking was to have the GP stay involved and interested in their attempts to stop smoking. These results indicate the essential role GPs can play (possibly without realising) in talking with and staying interested and involved in a patient's progress and it is important GPs recognise that often it is this verbal information that patients apply to their lives. As such, GPs should be looking for ways to bring up the issue of smoking with patients and to openly and frankly discuss a patient's desire and ability to stop smoking.

Figure 10. What GPs did to aid smoking cessation



Limitations

There are a number of limitations in this study. It was difficult to ensure the reception staff remembered to ask each patient to complete the survey, and therefore reduce selection bias. Recall bias is involved as the survey requires some patients to recall events that happened many years ago.

Our patient populations may be different to the national population, therefore may not be representative or applicable to the country as a whole.

Because of the small sample size, it is hard to interpret the significance of our results.

The question that was intended for our patients to categorise themselves in the state of change model was open to a variety of interpretations. It was difficult to standardise the classifications in the study. Patients may well place themselves in the 'thinking about quitting' simply because they were filling the survey in a medical setting.

Another source of bias is that of data entry. For example there is only one category allowed in the database for the question that involved how the GP helped with cessation, whereas seven patients ticked more than one box.

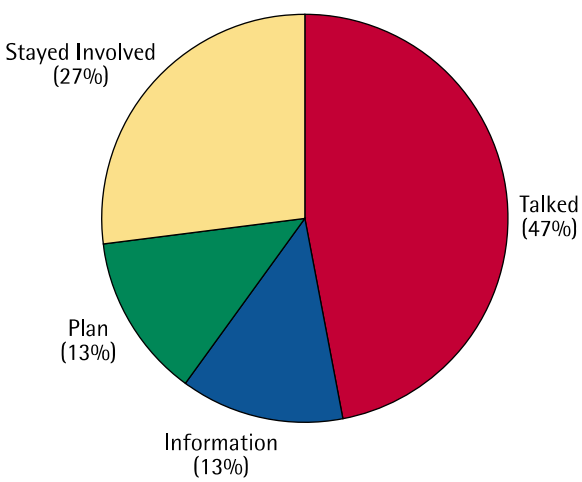
Time

Obviously time was a limiting factor – particularly in designing our study, developing our questionnaire and correlating the data.

In hindsight some of the wording of our questionnaire was unclear, and was interpreted by patients in a way we did not intend for that question. For example, a proportion of our patients interpreted the question on whether they were happy to be asked about their smoking habits as did they mind filling out the questionnaire, instead of if they minded smoking habits being raised by their GP. It was therefore decided that this question would not be used in our analysis.

Although we encountered a number of limitations in our study

Figure 11. How GPs aided smoking cessation in ex-smokers



we are still able to use our data for a snapshot look at smoking and smoking cessation in our given general practices.

Conclusions

Our survey revealed that general practitioners adequately raised the issue of smoking and smoking cessation with their patients, as illustrated by the 88.3% of smokers who were asked about their smoking habits. However, of concern is the finding that only 56% of respondents were then further questioned about whether they had considered giving up.

It was outside the scope of this project to explore the issues as to why this initial smoking question was not followed up, however this is something we feel deserves further study and analysis if GPs are to be effective in implementing cessation programmes.

Our study showed that some GPs were using the technique of motivational interviewing to aid in smoking cessation as shown by the state of change graphs. However it is a concern that even after asking whether a patient had considered quitting, 32% of respondents said the GP did nothing.

Our study provides a 'snapshot' view of how and if GPs are addressing smoking and smoking cessation in their consultations, however it also reveals a number of areas that warrant further study and may in fact highlight areas where GPs may benefit from further education.

Recommendations

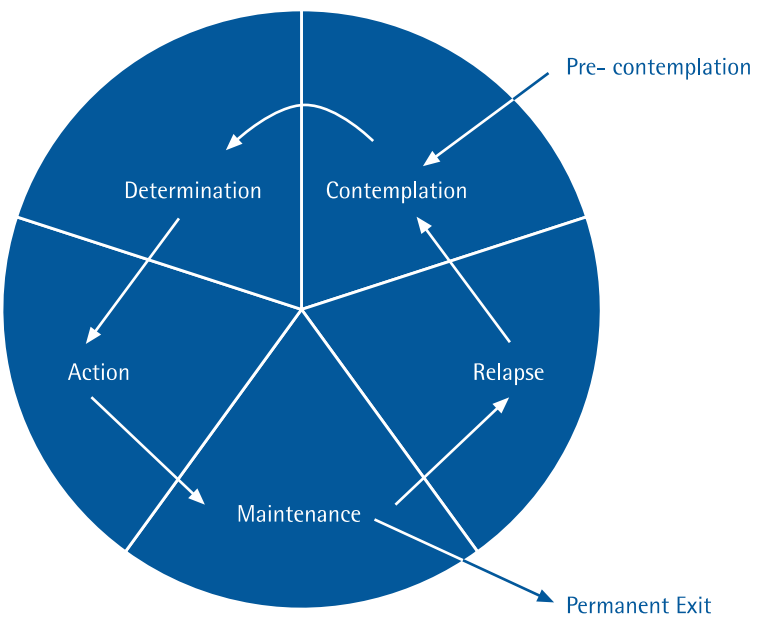
1. The implementation of on-going general practitioner training regarding:
   a. smoking and the effects thereof;
   b. raising the subject as part of a routine consultation;
   c. techniques to assist patients to stop smoking – these techniques can be as simple as talking to the patient about their smoking and empowering them to change their behaviours;
   d. effective follow-up techniques and for GPs to remain supportive and involved once a patient enters the maintenance category.
2. Increased public awareness (e.g. through media) about available cessation programmes and aids and continued awareness and literature about the effects of smoking on one's health and wellbeing.
3. A more comprehensive study, with a larger population size, to accurately assess the role that general practitioners play in smoking cessation. This study should also include a question asking non-smokers whether their GP had asked about their smoking status to assess whether the issue of smoking is raised as part of a routine consultation.

Acknowledgements

We wish to thank the following people: Dr Ruth Brown, Dr Pat Hill, Dr Nell de Graaf, Dr Tim Linton, Dr Gerald Young, Dr Sue Pullon, WSM General Practice Department

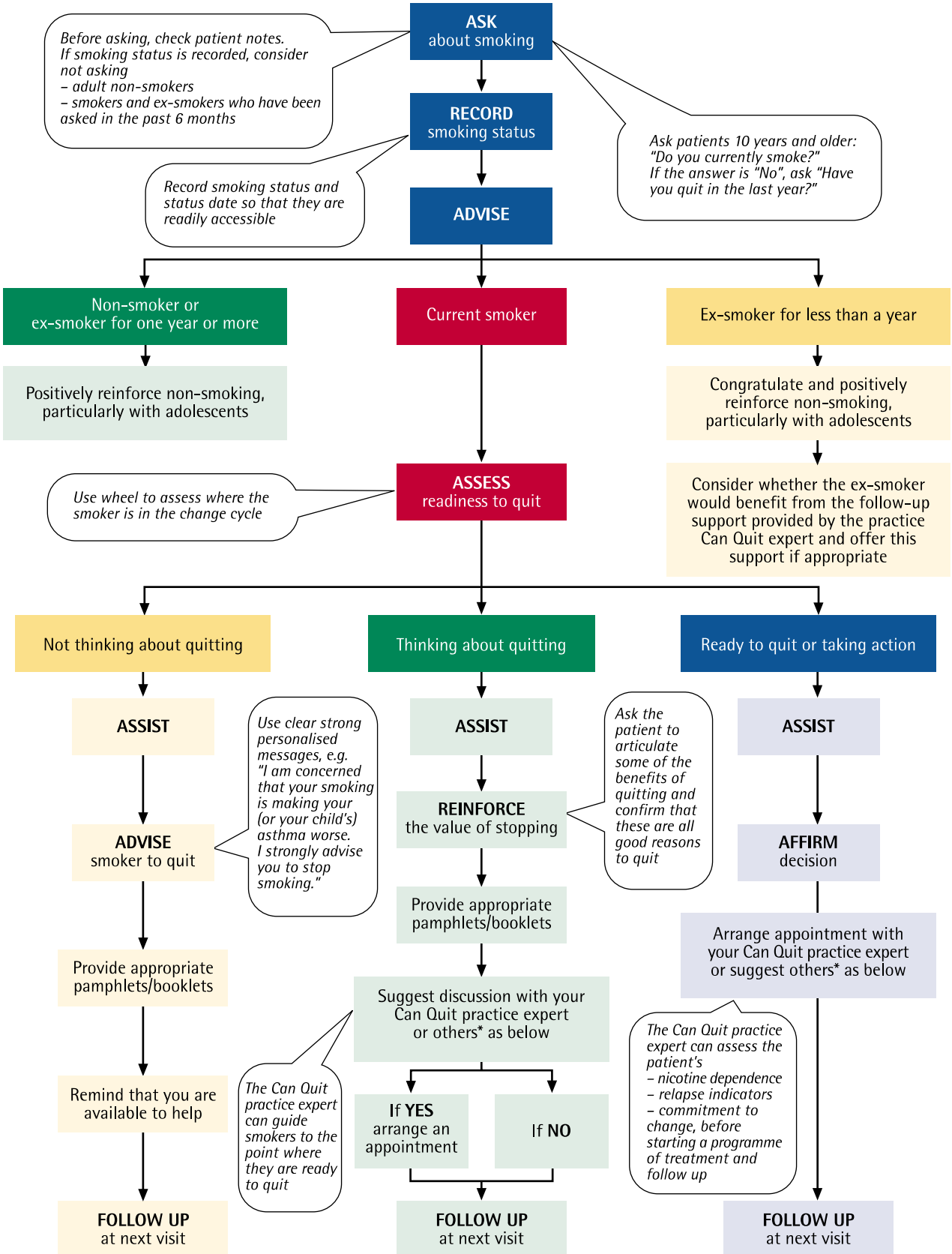
Appendix 1

STATE OF CHANGE MODEL



Appendix 2

YOUR PATIENT CAN QUIT: Brief Intervention



** What else can you offer?*

Quitline 0800 778 778, Your local Cancer Society, Wellington 04-389 8421, Wairarapa 06-378 8039. Aukati kai paepa rua mano 04-939 4631, The Green Prescription 0800 228 483

Appendix 3

General Practice Questionnaire

We are final year students at the Wellington School of Medicine. As part of our general practice course we are undertaking a study on smoking.

We would appreciate it if you would take the time to complete this survey, even if you do not smoke.

We are not collecting any identifying data and the information collected is strictly confidential.

This survey is optional and will not affect your care in any way.

Thank you for your help.

1. Sex: Male ❑ Female ❑

2. Age in Years: _____

3. Ethnicity: NZ European ❑ Mäori ❑ Pacific Islander ❑ Other ❑

4. How would you describe yourself?
   a. Non smoker (Never smoked) ❑ *(Survey finished)*
   b. Smoker
      – not thinking about quitting ❑
      – thinking about quitting ❑ *(Please go to Question 5)*
      – preparing to quit ❑
      – trying to quit ❑
   c. Ex-smoker ❑
      – When did you quit smoking? Weeks_____ Months_____ Years_____
      – Did your GP/someone in the practice help you quit? Yes ❑ No ❑ *(If yes go to Question 7)*

5. Has your GP/someone in the practice asked if you smoke? Yes ❑ No ❑

6. Has your GP/someone in the practice asked you about giving up? Yes ❑ No ❑

7. What did they do?
   a. Nothing ❑
   b. Talked about smoking and/or ways to quit ❑
   c. Gave me written information ❑
   d. Helped me come up with a plan to quit ❑
   e. Stayed involved and interested ❑

8. Were you happy to be asked about your smoking habits? Yes ❑ No ❑

THANK YOU FOR YOUR TIME

References

1. Ministry of Health. Tobacco Facts 2001. Available on Ministry of Health Website: http.moh.govt.nz
2. Peto D, Lopez J, Boreham J et al. Mortality from smoking in developed countries. Oxford: Oxford University Press; 1994.
3. Doll R, Peto R, Wheatley K, Gray R. Mortality in relation to smoking: 40 years' observations on male British doctors. BMJ 1994; 309:901–11.
4. Royal College of Physicians. Smoking and the Young. A Report of a Working Party of the Royal College of Physicians. Royal College of Physicans 1992. (Summary in J Roy Coll Phys Lond 1992; 26: 352–6).
5. NHMRC Working Party. The Health Effects of Passive Smoking. Canberra: National Health and Medical Research Council Draft Report; 1995.
6. B Chilmonczyk B, Salmun L, Megalith K et al. Association between exposure to environmental tobacco smoke and exacerbations of asthma in children. N Engl J Med 1993; Feb 13–14.
7. Dekker C, Dales R, Bartlett S et al. Childhood asthma and the indoor environment. Chest1991; 100:922–6.
8. Ministry of Health. Taking the Pulse. The 1996/97 New Zealand Health Survey. Wellington: Ministry of Health; 1999.
9. Laugeson M. Tobacco Statistics 1996. Wellington: Cancer Society of New Zealand and NZ Ministry of Health; 1996.
10. Group Health Cooperative of Puget Sound. Tobacco Cessation Guideline. In: Clinical Practice Guidelines 1997–99 Edition. Seattle: Group Health Cooperative of Puget Sound; 1997.
11. McElduff P, Dobson A, Beaglehole R and Jackson R. Rapid reduction in coronary risk for those who quit cigarette smoking. Aust NZ J Pub Health 1998; 22:7 787–91.
12. Williamson D, Madans J, Anda R et al. Smoking cessation and severity of weight gain in a national cohort. N Engl J Med 1991; 324: 739–45.
13. Fiore M. Novotmy T. Pierce J et al. Methods used to quit smoking in the United States: do cessation programmes help? JAMA 1994; 271:1940–7.
14. Silagy C, Mant D, Fowler G, Lancaster T. Nicotine replacement therapy for smoking cessation. In: Lancaster T, Silagy C, Fullerton D (eds). Tobacco Addiction Module of the Cochrane Database of Systematic Reviews. [updated 1 September 1997]. The Cochrane Collaboration: Issue 4. Oxford: Update Software; 1998.
15. Sikberg L, Maxwell P, Kottke T et al. A systematic primary care office-based smoking cessation program. J Fam Pract 1990; 30: 647–54.
16. Ershoff D, Mullen P, Quinn V. A randomised trial of a serialised self-help smoking cessation program for pregnant women in HMO. Am J Public Health 1989; 79:182–7.