

Influence of physician and patient gender on provision of smoking cessation advice in general practice

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Abstract

Objective—To examine the association between physician and patient gender and physicians' self-reported likelihood of providing smoking cessation advice to smokers using hypothetical case scenarios in primary care.

Design—Cross-sectional analysis of a self-administered questionnaire.

Subjects—National random sample of Australian general practitioners (GPs).

Main outcome measures—Self-reported likelihood of advising hypothetical male and female smokers to stop smoking during a consultation for ear-syringing ("opportunistic" approach) or a dedicated preventive health "check up".

Results—855 GPs returned questionnaires (67% response rate). Significantly more respondents indicated they would be "highly likely" to initiate an opportunistic discussion about smoking with a male smoker (47.8% (95% confidence intervals (CI) = 44.5 to 51.2)) than a female smoker (36.3% (95% CI = 33.1 to 39.5)). Older, male GPs were less likely to adopt an opportunistic approach to smoking cessation for patients of either sex. Respondents were more likely to recommend that a male patient return for a specific preventive health check up. Furthermore, in the context of a health check up, a greater proportion in total of respondents indicated they would be "highly likely" to discuss smoking with a man (86.9%, 95% CI = 84.5 to 89.0) than a female smoker (82.5%, 95% CI = 79.8 to 84.9).

Conclusions—As measured by physician self-report, the likelihood of advising smokers to quit during primary care consultations in Australia appears to be influenced by gender bias. Gender-sensitive strategies to support cessation activities are recommended.

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Introduction

In Australia, primary medical care is provided on a fee-for-service basis by physicians known as general practitioners (GPs). Over 98 million consultations are provided every year.¹ GPs are encouraged to include preventive care "opportunistically" by initiating a discussion about preventive care during any routine consultation, regardless of the reason for this

consultation.² Traditionally, they have provided preventive care as part of a dedicated consultation for a health check up or periodic health examination. As over 80% of the Australian population attend a GP at least once a year however,³ an opportunistic approach has the potential to reach almost everyone in the community, not just the "worried well" who disproportionately attend for check ups.^{4,5}

Evidence-based guidelines in Australia^{6,7} and elsewhere^{8,9} are unanimous and unequivocal in recommending that smoking cessation advice be given opportunistically during every medical consultation with a smoker. Indeed, Kottke recently urged physicians to:

"Be unique! Become part of the minority of physicians who can find the smoking status of every one of their patients in the medical record. Become a physician who advises every smoker at every visit to quit smoking."¹⁰

Australian general practitioners believe that smoking cessation advice is an important part of their role¹¹ and the community expects to receive lifestyle advice about smoking from their family doctor.¹² Even brief advice from a general practitioner can improve quit rates by 3-6% compared with those quit rates of smokers who do not receive advice.¹³⁻¹⁵ Although this impact might appear small, it would translate into a potentially important decrease in smoking prevalence if all smokers who attended a GP were advised to quit.¹⁶

Research in Australia has repeatedly demonstrated missed opportunities for smoking cessation advice in general practice however.¹⁷⁻²⁰ In a seminal study conducted over a decade ago, GPs' rates of detection of smokers were no better than chance.¹⁷ Follow up of these same GPs 10 years later revealed little improvement in their rate of identification of smokers.²¹

Previous studies describing patterns in smoking cessation advice in primary health care have found varying effects of patient gender. Analysis of aggregated data from two random community surveys in Michigan (n = 5875) found that, among smokers who had consulted a physician in the past year, 46% of women and 42% of men recalled ever being advised to quit by a doctor.²² Similarly, 51.2% of female smokers and 46.1% of male smokers interviewed as part of the Stamford Five-City Project recalled having ever been advised to quit by a physician.²³ However, this apparently higher rate of smoking cessation advice to female smokers could be partly explained by their more frequent attendance.²³ As part of the

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OXCHECK study, health and lifestyle questionnaires were mailed to the registered patients of five general practices in Bedfordshire.²⁴ Unadjusted for frequency of attendance, slightly more female smokers (28.0%) than male smokers (26.3%) recalled receiving cessation advice from a doctor or nurse during the previous year.²⁴ In contrast, a study involving 311 smokers attending family medicine residents in Buffalo, New York reported a significantly higher proportion of male smokers (50.5%) than female smokers (37%) recalled being advised to stop smoking by the resident during three-months of follow up.²⁵ More recently, an Australian study used videotaped recordings to directly observe general practice consultations with 157 smokers in Victoria. In this study, a greater proportion of male than female smokers were identified (38% *vs* 28%) and counselled (35% *vs* 25%), although the differences were not statistically significant.¹⁹

As the provision of smoking cessation advice is a crucial element in a tobacco control strategy,²⁶ we conducted this study within a larger survey to determine physician (GP) and patient variables predicting physicians' self-reported smoking cessation advice during either a routine consultation for ear syringing or during a preventive health check up.

Methods

GP SAMPLE AND SURVEY ADMINISTRATION

The Commonwealth Department of Health provided a stratified random sample of 1550 GPs. The sample was stratified by sex and state/territory. From these, 229 were ineligible leaving a final sample of 1271. As described fully elsewhere,²⁷ a cover letter, questionnaire and reply-paid envelope were mailed in May 1996, using standardised response-aiding strategies to follow up non-responders.

QUESTIONNAIRE CONTENT

As part of a 20-page questionnaire about cancer issues, respondents were presented with four case scenarios. The first case scenario described a routine consultation with an otherwise well 58-year-old female patient, who was not distressed, attending to have her ears syringed. Respondents were asked to indicate on a three-point scale ("highly likely", "somewhat likely" and "would not discuss") the likelihood of their initiating an opportunistic discussion about each of 12 preventive topics during this hypothetical consultation. Specifically, respondents were asked the likelihood of their providing smoking cessation advice if she was a smoker and the likelihood of their recommending she return for a periodic health examination. The second case scenario described a female patient of the same age but attending for a periodic health examination. Respondents were asked to indicate the likelihood of including a discussion of each of 12 preventive health topics, including smoking cessation advice for a smoker, within this health check up. Two case scenarios were then described for hypothetical male patients aged 58 years. Details were identical with the scenarios for the female patient with the

substitution of digital rectal examination and prostate-specific antigen testing for breast and cervical cancer screening tests.

The final section included eight sociodemographic questions including respondents' age, sex, part time or full time work status, group or solo practice, metropolitan or rural practice location, membership of the Royal Australian College of General Practitioners (RACGP, the peak professional body representing GPs), membership of the Australian Medical Association (AMA) and membership of a local division of general practice. Copies of the questionnaire are available on request.

DATA ANALYSIS

Characteristics of study respondents were compared with those of general practitioners in Australia.¹ Descriptive statistics were calculated before and after weighting of the data to adjust for state and sex differences between our sample and the reference population.

McNemar's test for paired proportions was used to determine if observed differences in the percentage of respondents indicating they would be "highly likely" to include smoking cessation advice with male and female patients (opportunistically and during a check up) were statistically significant. Each analysis was also undertaken for male and female doctors separately to investigate potential bias due to physician and patient being the same or opposite sex. We calculated 95% confidence intervals for the difference in proportions.

Univariate relationships were assessed using χ^2 analyses for reported likelihood of not including a discussion about smoking and each of eight personal and professional characteristics. Logistic regression analyses adopting a manual backwards stepwise modelling strategy were subsequently performed. All variables found to be significant ($p \leq 0.05$) or near significant ($p \leq 0.1$) in univariate analysis were included in the full model. We also included interaction terms between GP age and GP gender and part time or full time work status and GP gender in the full model in the presence of the main effects. After eliminating interaction terms, the least significant variable was eliminated at each step until all remaining variables were significant predictors. Significance was assessed using the Wald χ^2 statistic for dichotomous variables and the likelihood ratio test for variables with more than two categories. 95% Confidence intervals were constructed around the odds ratios from each of the final logistic regression models. Goodness of fit of each final model was assessed using the Hosmer-Lemeshow χ^2 test. All analyses were performed using SAS for Windows version 6.11.²⁸

ETHICS

The study was approved by the ethics review committee of Central Sydney Area Health Service.

Results

From 1271 eligible general practitioners, we received 855 questionnaires (67% response

Table 1 General practitioners' likelihood of discussing smoking opportunistically with a patient presenting for ear syringing or during a health check up

		"Highly likely" n (%)	95% CI (%)	"Somewhat likely" n (%)	95% CI (%)	"Would not discuss" n (%)	95% CI (%)
Opportunistic	Female patient	310 (36.3)	33.1–39.5	382 (44.7)	41.4–48.0	140 (16.4)	14.0–19.0
	Male patient	409 (47.8)	44.5–51.2	319 (37.3)	34.1–40.6	108 (12.6)	10.5–15.0
Health check up	Female patient	705 (82.5)	79.8–84.9	118 (13.8)	11.6–16.2	16 (1.9)	1.1–3.0
	Male patient	743 (86.9)	84.5–89.0	92 (10.8)	8.8–13.0	8 (0.9)	0.4–1.8

CI = confidence intervals.

rate). The response rate for females (75%) was significantly higher than that for males (63%) ($\chi^2=15.4$, 1 df, $p<0.001$) but there was no other evidence of response bias.²⁷ As there was close agreement between weighted and unweighted estimates (within 1%), the latter are reported.

SMOKING CESSATION ADVICE IN ROUTINE CONSULTATIONS

Responses for male and female respondents combined to the questions asking about the likelihood of introducing a discussion about smoking in each of the four case scenarios (see questionnaire content) are shown in table 1. For an opportunistic approach, the difference of 12% (95% CI = 9 to 15) in the proportion of respondents indicating they would be "highly likely" to provide opportunistic smoking cessation advice to a male patient compared with a female patient was highly significant (McNemar's $\chi^2 = 56.16$, 1 df, $p<0.001$). Stratification of responses by GP gender demonstrated that both male and female GPs were significantly more likely to discuss smoking opportunistically with the male patient (McNemar's $\chi^2 = 27.25$, 1 df, $p<0.001$; McNemar's $\chi^2 = 28.89$, 1 df, $p<0.001$ respectively).

We then examined predictors of the response "would not discuss" to identify characteristics of those GPs who have not adopted an opportunistic approach to smoking cessation advice. There was no evidence of statistical interaction between age and gender or part time/full time work status and gender in any models. For male and female patient scenarios, GP age and gender were found to be independently predictive of not including opportunistic smoking cessation advice during routine consultations. After adjusting for the other variable, male GPs and older GPs of either sex were found to be

less likely to offer opportunistic smoking cessation advice (table 2).

We also had asked respondents to indicate how likely they would be to recommend to the female and male patient attending with a clinical condition that she or he return for a specific preventive health check up. A total of 447 (52%, 95% CI = 49 to 56) indicated that, during the course of such a consultation, they would be "highly likely" to recommend the female patient return for a health check up compared with 492 (58%, 95% CI = 54 to 61) for the male patient. This difference of 5% was highly significant (95% CI = 2 to 8, McNemar's $\chi^2 = 13.4$, 1 df, $p<0.001$).

SMOKING CESSATION ADVICE DURING A HEALTH CHECK UP

As also shown in table 1, significantly more respondents indicated they would be "highly likely" to discuss smoking with a male than a female patient during a dedicated health check up (McNemar's $\chi^2 = 18.01$, 1 df, $p<0.001$). Again, this increase in reporting a high likelihood of discussing smoking with a male patient was significantly different for both male and female respondents (McNemar's $\chi^2 = 8.82$, 1 df, $p<0.01$; McNemar's $\chi^2 = 8.65$, 1 df, $p<0.01$ respectively).

Discussion

While most respondents indicated they would be "highly likely" to initiate a discussion about smoking with a smoker of either sex during a dedicated health check up, approximately one in six GPs indicated they "would not discuss" the patient's smoking status opportunistically. Further, gender has been shown in our study to independently influence the provision of smoking cessation advice as measured by self-report.

Our results demonstrate that a significantly greater proportion of respondents would be "highly likely" to discuss smoking with a male smoker compared with a female smoker. Furthermore, an opportunistic approach to smoking cessation advice remains underused for patients of either sex. The rates of self-reported opportunistic smoking cessation advice found in this study are similar to rates recorded by direct observation in general practice.^{17 19–21} In addition, in our study, male patients were more likely to be advised to return for a specific health check up, a situation in which smoking cessation advice was also more likely to be provided to them.

It has been suggested that preventive services "compete" for the restricted time available during a consultation.²⁹ Previous research has shown that when prevention is included opportunistically in a routine consul-

Table 2 Independent predictors of responding "would not discuss" smoking opportunistically with male and female smokers

Predictor	n	"Would not discuss" n (%)	Adjusted OR*	95% CI	p
Female patient					
GP age group	<40 years	270	22 (8.2)	1.00	
	40–49 years	307	61 (19.9)	2.50	1.52–4.08
	50–59 years	165	36 (21.8)	2.67	1.54–4.64
	≥60 years	88	17 (19.3)	2.14	1.09–4.20
GP sex	Male	529	101 (19.1)	1.00	
	Female	326	39 (12.0)	0.63	0.42–0.96
Male patient					
GP age group	<40 years	270	21 (7.8)	1.00	
	40–49 years	307	46 (15.0)	2.01	1.18–3.42
	50–59 years	165	25 (15.2)	1.92	1.04–3.52
	≥60 years	88	14 (15.9)	1.87	0.91–3.86
GP sex	Male	529	80 (15.1)	1.00	
	Female	326	28 (8.6)	0.57	0.36–0.91

*Odds ratios (OR) for GP age group adjusted for GP sex and vice versa.
CI = confidence intervals.

tation, typically only one or, at most, two topics are discussed.²¹ For women of the same age as the hypothetical patient in our study, cervical and breast cancer screening is recommended.⁶ Our finding that fewer respondents would be "highly likely" to provide smoking cessation advice to a female than a male smoker may reflect an awareness of the greater number of effective preventive care interventions competing for attention during consultations with women.

Ominously, women are at increasing risk of smoking-related disease because their uptake of smoking is rising compared with men.³⁰ Our findings suggest that older, male GPs are less likely to counsel female patients about smoking. Strategies to improve the frequency and quality of smoking cessation advice by GPs are needed. A recent systematic review of randomised trials concluded that participation in formal training in smoking cessation significantly increases the rate of quit advice provided to patients.³¹ However, none of the primary research considered in that systematic review particularly addressed the gender bias which is emerging as a factor in the provision of preventive care in general practice. For example, it appears women attending female physicians are more likely to have been screened for breast and cervical cancer.³²⁻³⁴ These studies did not examine the provision of smoking cessation advice. To achieve equitable outcomes from preventive care, particularly for women who consult a male physician, postgraduate training may need to encompass a gender-sensitive curriculum.

We conclude with three methodological caveats. Firstly, despite our high response rate, respondents may differ systematically from non-respondents with regards to smoking cessation practices. Secondly, self-reported practices as measured in this study are likely to over-report actual behaviour.¹⁷ Lastly, if social desirability may have influenced responses, this bias itself may vary significantly between male and female respondents. An observational study to examine gender differences is recommended.

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- 1 Commonwealth Department of Health and Family Services. *General practice in Australia: 1996*. Commonwealth of Australia: Canberra 1996 (ISBN 0642254702).
- 2 Stott N, Davis R. The exceptional potential in each primary care consultation. *J R Coll Gen Pract* 1979;29:201-15.
- 3 ABS Australian Bureau of Statistics. *Australian Health Survey 1983*. Sydney: ABS, 1986 (Catalogue No 3303.0).
- 4 Yankauer A. Public and private prevention. *Am J Public Health* 1983;73:1032-4.
- 5 Waller D, Agass M, Mant D, et al. Health checks in general practice: another example of inverse care? *BMJ* 1990;300:1115-8.

- 6 Royal Australian College of General Practitioners. *Guidelines for preventive activities in general practice*, 4th ed. RACGP, 1996.
- 7 National Health and Medical Research Council. Working party on assessment of preventive activities in the health care system. *Guidelines for preventive activities in primary health care—cardiovascular disease and cancer*. NHMRC: December 1996.
- 8 US Preventive Services Task Force. *Guide to clinical preventive services*, 2nd ed. Baltimore: Williams and Wilkins, 1996.
- 9 Canadian Task Force on the Periodic Health Examination. *Canadian guide to clinical preventive health care*. Ottawa: Canada Communications Group, 1994.
- 10 Kottke TF. Observing the delivery of smoking cessation interventions. *Am J Prev Med* 1998;14:71-2.
- 11 Cockburn J, Killer D, Campbell E, et al. Measuring general practitioners' attitudes towards medical care. *Fam Pract* 1987;4:192-9.
- 12 Cumming R, Barton G, Fahey P, et al. Medical practitioners and health promotion: results from a community survey in Sydney's western suburbs. *Commun Health Stud* 1989;8:294-300.
- 13 Wilson DH, Wakefield MA, Steven ID et al. "Sick of smoking": evaluation of a targeted minimal smoking cessation intervention in general practice. *Med J Aust* 1990;152:518-21.
- 14 Slama K, Kartensky S, Hirsch A. Effectiveness of minimal intervention by general practitioners with their smoking patients: a randomised controlled trial in France. *Tobacco Control* 1995;4:162-9.
- 15 Ashenden R, Silagy C, Weller D. A systematic review of the effectiveness of promoting lifestyle change in general practice. *Fam Pract* 1997;14:160-76.
- 16 Chapman S. General practitioner anti-smoking programmes: which one? *Med J Aust* 1990;152:508-9.
- 17 Dickinson J, Wiggers J, Leeder S, et al. General practitioners' detection of patients' smoking status. *Med J Aust* 1989;150:420-6.
- 18 Heywood A, Sanson-Fisher RW, Ring I, et al. Risk prevalence and screening for cancer by general practitioners. *Prev Med* 1994;23:152-9.
- 19 Humair JP, Ward JE. Smoking-cessation strategies observed in videotaped general practice consultations. *Am J Prev Med* 1998;14:1-8.
- 20 Ward JE, Sanson-Fisher RW. Accuracy of patient recall of opportunistic smoking cessation advice in general practice. *Tobacco Control* 1996;5:1-6.
- 21 Wiggers JH, Sanson-Fisher RW. Practitioner provision of preventive care in general practice consultations: association with patient educational and occupational status. *Soc Sci Med* 1997;44:137-46.
- 22 Anda RF, Remington PL, Sienko DG, et al. Are physicians advising smokers to quit? The patient's perspective. *JAMA* 1987;257:1916-19.
- 23 Frank E, Winkelby MA, Altman DG, et al. Predictors of physicians' smoking cessation advice. *JAMA* 1991;266:3139-44.
- 24 Cummings KM, Giovino G, Sciandra R, et al. Physician advice to quit smoking: who gets it and who doesn't. *Am J Prev Med* 1987;3:69-75.
- 25 Silagy C, Muir J, Coulter A, et al. Lifestyle advice in general practice: rates recalled by patients. *BMJ* 1992;305:871-4.
- 26 Austoker J, Sanders D, Fowler G. Smoking and cancer: smoking cessation. *BMJ* 1994;308:1478-82.
- 27 Ward J, Bruce T, Holt P, et al. Labour-saving strategies to maintain survey response rates: a randomised trial. *Aust N Z J Public Health* 1998;22:394-6.
- 28 SAS Institute Inc. *Release 6.11 for Windows*. Cary, North Carolina: SAS Institute Inc., 1995.
- 29 Jaen CR, Stange KC, Nutting PA. Competing demands of primary care: a model for the delivery of clinical preventive services. *J Fam Pract* 1994;38:166-71.
- 30 Hill DJ, White VM. Australian adult smoking prevalence in 1992. *Aust J Public Health* 1995;19:305-8.
- 31 Silagy C, Lancaster T, Fowler G, et al. Training health professionals in smoking cessation. (Cochrane Review) In: *The Cochrane library*, issue 2. Oxford: Update Software, 1998. Updated quarterly.
- 32 Lurie N, Slater J, McGovern P, et al. Preventive care for women: does the sex of the physician matter? *N Engl J Med* 1993;329:478-82.
- 33 Levy S, Dowling P, Boulton L, et al. The effect of physician and patient gender on preventive medicine practices in patients older than fifty. *Fam Med* 1992;24:58-61.
- 34 Franks P, Clancy CM. Physician gender bias in clinical decisionmaking: screening for cancer in primary care. *Med Care* 1993;31:213-18.