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

Jane M Young, Jeanette E Ward

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.

(Tobacco Control 1998;7:360–363)

Keywords: smoking cessation, gender, general practitioners

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 Australia6–7 and elsewhere8–9 are unanimous and unequivocal in recommending that smoking cessation advice be given opportunistically during every medical consultation with a smoker. Indeed, Kotke 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.17–19 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 physician.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.22 This, however, apparently higher rate of smoking cessation advice to female smokers could be partly explained by their more frequent attendance.23
Influence of gender on smoking cessation advice

In the OXCHECK study, health and lifestyle questionnaires were mailed to the registered patients of five general practices in Bedfordshire. Unadvised 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. In contrast, a study involving 311 smokers (26.3%) recalled receiving 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.

**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 elsewhere, 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

**DATA ANALYSIS**

Characteristics of study respondents were compared with those of general practitioners in Australia. 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 $\chi^2$ 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 ($p < 0.1$) 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 $\chi^2$ 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 $\chi^2$ test. All analyses were performed using SAS for Windows version 6.11.

**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...
opportunistically with male and female smokers.

Table 2: Independent predictors of responding "would not discuss" smoking opportunistically with a patient presenting for ear syringing or during a health check up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Male patient</th>
<th>Female patient</th>
<th>OR*</th>
<th>95% CI (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Would not discuss&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Opportunistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female patient</td>
<td>310 (36.3)</td>
<td>33.1–39.5</td>
<td>382 (44.7)</td>
<td>41.4–48.0</td>
<td>140 (16.4)</td>
</tr>
<tr>
<td>Male patient</td>
<td>409 (47.8)</td>
<td>44.5–51.2</td>
<td>319 (37.3)</td>
<td>34.1–40.6</td>
<td>108 (12.6)</td>
</tr>
<tr>
<td>Health check up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female patient</td>
<td>705 (82.5)</td>
<td>79.8–84.9</td>
<td>118 (13.8)</td>
<td>11.6–16.2</td>
<td>16 (1.9)</td>
</tr>
<tr>
<td>Male patient</td>
<td>743 (86.9)</td>
<td>84.5–89.0</td>
<td>92 (10.8)</td>
<td>8.8–13.0</td>
<td>8 (0.9)</td>
</tr>
</tbody>
</table>

CI = confidence intervals.

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

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

<table>
<thead>
<tr>
<th>Predictor</th>
<th>OR*</th>
<th>95% CI (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male patient</td>
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<tr>
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<td>362</td>
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</tbody>
</table>

CI = confidence intervals.

**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. 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. Previous research has shown that when prevention is included opportunistically in a routine consul-

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

<table>
<thead>
<tr>
<th>Predictor</th>
<th>n (%)</th>
<th>Adjusted OR*</th>
<th>95% CI (%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male patient</td>
<td></td>
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<tr>
<td>GP age group</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40 years</td>
<td>270</td>
<td>22 (8.2)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>40–49 years</td>
<td>307</td>
<td>46 (15.0)</td>
<td>2.01</td>
<td>1.18–3.42</td>
</tr>
<tr>
<td>≥ 60 years</td>
<td>88</td>
<td>14 (15.9)</td>
<td>1.87</td>
<td>0.91–3.86</td>
</tr>
<tr>
<td>GP sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>529</td>
<td>80 (15.1)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>326</td>
<td>28 (8.6)</td>
<td>0.57</td>
<td>0.36–0.91</td>
</tr>
</tbody>
</table>

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

CI = confidence intervals.
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The study was funded by a Commonwealth GPEP grant. JY is supported by a PHRDC research scholarship. WJ thanks the general practitioners who completed the survey without financial incentive; Phoebe Holt for assisting in questionnaire design; Tracey Bruce for diligent survey administration and Neil Donnelly for statistical advice.

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Tob Control 1998 7: 360-363
doi: 10.1136/tc.7.4.360

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