Seham Girgis
MBBCh, MPH, GradDipApplEpid, is Senior Project and Research Manager, The Diabetes Unit, Menzies Centre for Health Policy, Australian Health Policy Institute, The University of Sydney, New South Wales. sgirgis@med.usyd.edu.au

Armita Adily
BMedSc, MPH, is a PhD candidate, University of New South Wales.

Maria-Jose Velasco
BMedSc, MPH, is a project officer, Centre for Research, Evidence Management and Surveillance, Sydney South West Area Health Service, New South Wales.

Frances L Garden
MBiostat, BAppSci, is a biostatistician, Centre for Research, Evidence Management and Surveillance, Sydney South West Area Health Service, New South Wales.

Smoking patterns and readiness to quit

A study of the Australian Arabic community

Background

Smoking cessation interventions have typically focused on majority populations who, in Australia, are English speaking. There has been an overall decline in the prevalence of smoking in the Australian community. However, there remains a relative paucity of useful information about tobacco use and the effectiveness of tobacco interventions among specific ethnic minorities.

Objective

To determine associations of tobacco use and tobacco control indicators for Arabic speakers seen in the Australian general practice setting.

Methods

A cross sectional study in a consecutive sample of Arabic patients (n=1371) attending the practices of 29 Arabic speaking general practitioners in Sydney, New South Wales.

Results

Twenty-nine (53.7%) of 54 eligible Arabic speaking GPs in southwest Sydney participated in this study. Of 1371 patients seen, 29.7% were smokers. Smokers were more likely to report poorer health (χ^2=21.7, df=1, p<0.001); 35.7% reported high nicotine dependence. Dependence was more in men (χ^2=11.7, df=1, p<001) and those who reported poorer health (χ^2=4.9, df=1, p<0.03); 35.9% had attempted to quit in the previous year; 17% were in preparation stage of change; 42.7% recalled quit advice. Poorer self reported health status (AOR=2.13, 95% CI: 1.14-3.97, p=0.017) and unemployment (AOR=1.69, 95% CI: 1.51–4.90, p=0.033) were independent predictors of advice from a health professional, most often a GP (71%).

Conclusion

Our study confirms previous reports that the proportion of self reported current smokers among the Arabic community is higher than for the Anglo-European majority. There is a need for ethno specific campaigns in tobacco control.

■ Smoking cessation interventions have typically focused on majority populations who, in Australia, are English speaking. Although there has been an overall decline in the prevalence of smoking,[1,2] there remains a relative paucity of useful information about tobacco use among specific ethnic minorities.[3,4] In New South Wales, certain ethnic groups, as defined by their original country of birth outside of Australia, persistently exhibit high rates of smoking in population based studies compared with the Anglo-Celtic majority.[5] Tobacco use persists in its social acceptability among people from Arabic background compared to communities more readily reached by tobacco control efforts.[6–9] Arabic people consider smoking as a social activity and a form of entertainment which promotes relaxation.[10–15] In addition, alternative sources of nicotine such as narghile (tobacco placed on coals and smoked through water via a pipe) have regained popularity in the Eastern Mediterranean region and the Indian subcontinent.[16] In Australia, it appears that people from an Arabic background are less aware than the general population of the health risks of smoking.[7,14] Our study was designed in collaboration with Arabic speaking general practitioners to further illuminate the scope for tobacco control among their patients.

Methods

GP and patient recruitment

We recruited Arabic speaking GPs in southwest Sydney (New South Wales) by interrogating a commercial list of GPs who specified languages spoken (n=119). Eligible GPs offered consultations in Arabic, saw at least 30% of patients of Arabic background, worked at least 24 hours per week and, if in group practice, were designated to see their own patients during clinical sessions. General practitioners working in large medical centres were excluded because patients are not always designated to specific GPs in this setting.

Nicholas A Zwar
MBBS, PhD, FRACGP, is Professor of General Practice, School of Public Health and Community Medicine, University of New South Wales, and Director, General Practice Unit, Sydney South West Area Health Service, New South Wales.

Bin B Jalaludin
PhD, FAFPHM, MRCP(UK), is Director, Centre for Research, Evidence Management and Surveillance, Sydney South West Area Health Service, and Conjoint Professor, School of Public Health and Community Medicine, University of New South Wales.

Jeanette E Ward
MBBS, MHPEd, PhD, FAFPHM, is Director, Health Strategies, Cancer Council NSW, and Adjunct Professor, School of Epidemiology and Community Medicine, University of Ottawa, Ontario, Canada.

General practitioners were recruited consecutively from this list from April 2005 to March 2006. We obtained demographic data from GPs who declined to participate, including age group, gender, part time, full time practice status, and type of practice (group/solo) in order to assess possible response bias.

For each participating GP, a consecutive sample of patients of Arabic background aged 18–65 years was recruited during a specified 4 week period. Practice receptionists asked every eligible patient to participate in our study by completing a health questionnaire in either Arabic or English while waiting to see their GP.

Patients were considered ineligible if they were unable to read or understand the consent forms in Arabic or English, spoke Arabic but were not immigrants or children of Arabic speaking immigrants, too sick to participate, or planning to leave Australia within the next 12 months. Patients who had previously been approached were also considered ineligible. Patients who did not wish to participate were asked by the receptionist to provide their age and gender so we could examine possible response bias.

Our study protocol was approved by the Human Ethics Committees of SSWAHS and the Research Ethics Committee of the University of New South Wales.

Patient questionnaire

Questionnaire development was based on earlier work with English speakers and other ethnic minorities.[17–19] Questionnaire items were developed in English and translated into Arabic by an accredited bilingual translator. To maximise accuracy,[20] back translations from Arabic to English were then undertaken by a second independent bilingual health professional. Our questionnaire was pilot tested outside the study area for feasibility and acceptability.

Cultural appropriateness and face validity were assessed by obtaining feedback from 11 Arabic speaking professionals not otherwise involved in the study. These included psychologists (n=5), a psychiatrist (n=1), health educators (n=2), and GPs (n=3). In final print form, we offered two versions of questionnaires, Arabic or English.

Questionnaires asked for standard demographic information, health status including the presence or absence of each of six smoking related chronic health conditions, smoking history and the number of cigarettes smoked daily or weekly. We also asked all respondents to indicate if they smoked narghile, pipes or cigars.

Self reported current smokers were assessed for nicotine dependence using six questions from the Fagerstrom Test for Nicotine Dependence (FTND)[21] and for readiness to quit using three 'stage of change' questions from the Velicer classification.[22] In addition, we sourced questions from the Arabic Readiness to Stop Smoking Questionnaire (A-RSSQ), the Arabic language version of the Smoking and Women Questionnaire.[11,23] This questionnaire has been shown to have a high content validity and reliability for use in both men and women.[11] As recommended by Haddad et al,[11] we added one item to their published list of 14 items which examined the acceptability of pharmacological treatment such as nicotine replacement to assist in smoking cessation.

Finally, our questionnaire asked whether or not current smokers had received smoking cessation advice from any health professional in the previous 12 months. Sources of advice listed included GPs, medical specialists, nurses, Arabic or English speaking counsellors or government run quit line smoking cessation counsellors.

Data analysis

All analyses were performed using SPSS version 14.0. Variables were recoded as required. Descriptive analyses were performed for all variables. Fagerstrom scores were calculated as follows: 1–2 'very low', 3–4 'low', 5 'medium', 6–7 'high', '8–10' 'very high' dependency.[21] We calculated 'readiness to quit smoking' scores from the 15 items as recommended.[11]

Univariate analyses were performed to examine relationships between categorical outcome and independent study variables by using Pearson's Chi-square test. To determine univariate associations between continuous and categorical variables, the nonparametric Kruskal-Wallis test was used. Multivariate logistic regression analyses were undertaken to identify predictors for categorical outcomes.[24] To perform logistic multiple regression tests, independent variables which were associated with outcome variables at $p<0.25$ were included in the multivariate analysis.[24] A backward elimination procedure was used until only significant variables ($p<0.05$) remained.

The Hosmer and Lemeshow goodness of fit test was used to determine the appropriateness of the logistic regression models at 5% significance level.[24] Results from the logistic regression models are presented as adjusted odds ratios (AOR) with their associated 95% confidence intervals (CI). Multivariate linear regression analyses were performed to examine relations between scores and specified potential predictor variables by using a stepwise method of entry.

Results

GP recruitment

Of 54 eligible Arabic speaking GPs in southwest Sydney, 30 (56%) agreed to participate, although one subsequently withdrew without recruiting patients and another recruited patients for 3 days only. Data obtained from patients consulting the remaining 29 GPs are presented here. Of

these 29 GPs, 17 (59%) were male, 15 (52%) were in solo practice, and 26 (90%) worked full time.

Eight of the participating GPs (28%) were 35–44 years of age, 14 (48%) were 45–54 years of age, and seven (24%) were over 54 years of age. There were no significant differences in gender (χ^2=1.8, df=1, p=0.2), age group (χ^2=2.1,df=3, p=0.5), or working full time versus part time (χ^2=0.7, df=1, p=0.6) between GPs who participated compared to those who declined. However, solo GPs were significantly less likely to participate (χ^2=6.3, df=1, p=0.02).

Patient recruitment

During the nominated study periods, practice receptionists documented the attendance of 2496 patients from Arabic backgrounds. Of these, 628 were ineligible (unable to read the consent form in Arabic or English (n=211); in distress or too unwell (n=68); beyond the age cut off (n=204); or had been previously approached to participate in this study (n=145)). Of the eligible 1868 patients, 1371 (73.4%) completed the questionnaire. Women (75.5 vs. 70.6% men) (χ^2=5.2 df=1 p=0.02) and younger age groups (average age 36.8 vs. 39.9 years (t=4.5 df=1788 p<0.001) were significantly more likely to agree to participate in our study.

Characteristics of the respondents

Of the participants (n=1371), men comprised approximately one-third of the sample (32.4%). Approximately two-thirds of respondents reported that Arabic was the only language spoken at home (67.8%).

Language of completion of our questionnaire was virtually even (51.1% completed the Arabic version and 48.9% the English version). However, respondents who completed questionnaires in Arabic were significantly more likely than those who completed it in English to be older, less educated, unemployed, born overseas and to have a chronic health condition. Nonetheless, there was no difference in the rate of self reported current smoking.

In our sample, 43.9% (n=195) of 444 men and 22.9% (212) of 924 women reported being daily or occasional smokers. The difference between the genders in our sample is significant (χ^2=63.1, df=1, p<0.001). Advancing age was also significantly associated with current smoking (t=3.4, df=1338, p=0.001). Those respondents who completed high school or pursued tertiary education were more likely to self report themselves as 'nonsmokers' than those whose level of education was less than high school (61.0 vs. 38.3%) (χ^2=22.8, df=1, p<0.001).

Respondents who were unemployed as well as those permanently unable to work, on home duties, retired or students were, as a group, more likely to self report smoking compared with respondents with full time, part time or casual employment (60.0 vs. 37.6%) (χ^2=4.8, df=1, p=0.03). Country of birth (those born in an Arabic country such as Lebanon, Iraq, Egypt or Syria compared with those born in Australia of Arabic background) was not associated with current smoking (30.1 vs. 29.2%). Self report of smoking also was higher among those

who were divorced or widowed compared with married respondents (χ^2=21.3, df=2, p<0.001).

Importantly, respondents who reported being smokers were significantly less likely than nonsmokers to report that their health status was 'excellent' or 'very good' (χ^2=21.7, df=1, p<0.001). Smokers were significantly more likely than nonsmokers to report having at least one chronic smoking related health condition (χ^2=6.5, df=1, p=0.01).

Smoking patterns and dependence

Table 1 describes the smoking patterns of those 407 self reported current smokers seen in general practice. More than three-quarters (n=319, 78.4%) smoked daily. Forty-eight smokers (3.5%) reported smoking narghile – it is useful to note that 37 of these 48 (77%) used only narghile. For the entire sample of current smokers, the number of cigarettes smoked per day ranged 2–90 (mean 18.8, SD: 11.9, median 20.0, mode = 20 cigarettes/day). More than one-third (35.9%, n=146) of smokers had at least one attempt to quit smoking in the previous year.

Using the Fagerstrom scale, more than one-third of current smoking respondents were highly addicted; 35.7% had 'very high' or 'high' levels of nicotine dependence. Men (46.3%) were more likely than women (25.9%) to have 'very high' or 'high' nicotine dependence scores (χ^2=11.7, df=1, p=0.001). Respondents who reported 'good', 'fair' or 'poor' health status also were more likely than those who reported 'excellent' or 'very good' health status to have 'very high' or 'high' scores of nicotine dependence (38.9 vs. 22.9%) (χ^2=4.9, df=1, p<0.03). Furthermore, those with 'very high' or 'high' nicotine dependence were significantly less likely than all others to have had attempted to quit smoking in the previous 12 months (68 vs. 37%) (χ^2=12.5, df=1, p<0.001).

Smokers' stage of change and readiness to quit smoking scores

Using the Velicer classification,[22] we found that almost half of smokers were in the precontemplation stage (n=180, 44.2%) but only 15% (n=61) were in the preparation stage of change (*Table 1*). Men were more likely to be in preparation stage compared with women (21.3 vs. 12.0% respectively, (χ^2=11.09, 2 df, p=0.004).

Table 2 shows responses to the 15 individual items derived from Haddad et al.[11] Of note, there was strong support for smoke free environments (58% 'moderately or strongly agree'), legislation to support smokers who want to quit (51% 'moderately or strongly agree') and importance of clinical role models (51% 'moderately or strongly agree'). Although somewhat lower ranked, respondents supported involvement of family and friends as allies in quit attempts (32% 'moderately or strongly agree') and the importance of medicines such as nicotine patches (27% 'moderately or strongly agree').

The 15 items from Haddad et al were used to construct 'readiness to quit smoking' scores. In our sample, potential scores for 'readiness to quit smoking' could range from 15 (low readiness to quit) to 90 (high readiness to quit). Due to the missing responses, scores were calculated only for 136 smokers. For these, their scores ranged from 26–90 (median 75.50, mode 90). Univariate analysis showed no association between 'readiness to quit smoking' scores and Fagerstrom nicotine dependence

categories (Kruskal-Wallis test χ^2=4.76, 4 df, p=0.31). Multiple linear regression analyses demonstrated self reported health status as the only predictor for 'readiness to quit smoking' scores. Specifically, respondents with poorer health status ('poor', 'fair', 'good') had higher scores (mean 74.29) than those with better health status ('very good' or 'excellent') (mean 69.70).

Smoking cessation advice

Less than half of self reported current smokers in our sample recalled receiving smoking cessation advice from a health professional in the previous 12 months (n=175, 43%). When recalled, nearly two-thirds (64%) of this advice had been provided by GPs (*Table 1*). Recall of smoking cessation advice was significantly associated with level of nicotine dependence (using Fagerstrom categories). Specifically, of those who received advice to quit smoking by a health professional, 24.1% had 'very low' nicotine dependence (scores 1–2); 29.3% had 'low' nicotine dependence (3–4); 6.0% had 'medium' dependence (5), 24.1% had high dependence (6–7) and 16.4% had 'very high' nicotine dependence (scores 8–10) (χ^2=10.1, 4 df, p=0.04).

Multivariate logistic regression analyses revealed that poorer self reported health status was more than twice among those who received a smoking cessation advice from a health professional however (AOR=2.13, 95% CI: 1.14–3.97, p=0.017). Similarly, those who reported having at least one of the six smoking related health conditions (heart disease, asthma, emphysema, cancer, diabetes or vascular disease) specified in our questionnaire were more

Table 1. Smoking patterns, dependence and quit attempts for smokers (n= 407)

	N	Percent#
Smoking patterns		
Regular cigarette smoker*	320	78.6
Occasional cigarette smoker*	46	11.3
Pipes and cigars alone	4	1.0
Narghile smokers alone	37	9.1
Number of cigarettes smoked (per day) mean (SD); median; range	19 (12); 20; 2–90	
10 or less	91	22.4
11–20	109	26.8
21–30	62	15.2
31 or more	25	6.1
Nicotine dependency (Fagerstrom test) mean (SD); median; range	4.4 (2.5); 4; 1–10	
'High' or 'very high' dependence (score 7–10)	92	22.6
'Medium' dependence (score 5–6)	23	5.6
'Low' or 'very low' dependence (score less than 6)	143	35.1
Stage of change for smoking cessation		
Precontemplation	180	44.2
Contemplation	125	30.7
Preparation	61	15.0
Previous quit attempts		
At least one attempt in previous 12 months	146	35.9
No attempt	221	54.3
Recall of cessation advice		
Received no advice	190	46.7
Received advice (multiple responses):		
GP	112	27.5
Specialist	26	6.4
Arabic speaking counsellor	18	4.4
Nurse	8	2.0
English speaking counsellor	7	1.7
Quit line	6	1.5
Other	35	8.6

* Including those who smoke narghile or pipes and cigars in addition to cigarettes
# Columns do not add to 100% due to multiple and/or missing responses

than twice as likely as those without to recall receiving smoking cessation advice from a health professional (AOR=2.72, 95% CI: 1.51–4.90, *p*=0.001).

Employment status was also associated with receipt of smoking cessation advice from a health professional. Those who were unemployed, including those permanently unable to work, those who retired and students, were more likely to report receiving smoking cessation advice from a health professional than respondents who had full time, part time or casual employment (AOR=1.69, 95% CI: 1.51–4.90, *p*=0.033).

Discussion

Our study confirms previous reports that the proportion of self reported current smokers among the Arabic community is much higher than for the Anglo-European majority.[5] Furthermore, given the bias of self report, it is plausible that levels of smoking are even higher among Arabic speakers. Nicotine addiction was high; 35.7% had 'very high' or 'high' levels of nicotine dependence.

The influence of social determinants of health was evident in our sample. For example, current smokers were less likely to have pursued

Table 2. Responses to 15 items about readiness to quit (n=407)

	Strongly agree %*	Moderately agree %*	Slightly agree %*	Slightly disagree %*	Moderately disagree %*	Strongly disagree %*
Smoking is a health risk to others around me	61	12	8	2	2	5
When hooked on smoking I believe one's inner strengths are needed to help the person kick the habit	59	11	8	2	2	5
I believe there is a health risk from smoking to me	57	17	8	2	2	7
When attempting to quit smoking I need to plan activities that minimise stress	50	14	10	3	3	7
Smokers should seek strategies aimed at resolving the problems they face	47	13	12	3	3	7
I will need a high degree persistence to stop smoking	47	13	8	6	3	8
I believe it is not too late for a smoker to stop smoking	47	15	10	4	3	10
Doctors and nurses should set a non-smoking example to others	46	5	11	6	7	11
When attempting to quit smoking I should seek smoke free environments in which to socialise	45	13	10	6	4	8
I want to quit smoking	42	12	9	6	5	12
I believe that the health of our society should be protected by laws against smoking	41	10	9	8	4	14
When hooked on smoking I believe the smoker needs help from professional sources to help the person kick the habit	33	12	16	8	6	13
Believing that one will be successful in achieving goals enhances one's chances of success**	26	6	4	1	1	2
I would need close family members and/or friends to help me quit smoking	20	12	12	10	6	27
When hooked on smoking I believe medicines such as nicotine replacement (patches, gum or tablets) help the person to kick the habit#	17	10	19	12	7	20

* Where responses are missing, rows will not add to 100%

** >50% missing data due to administrative error and item omitted from English version of questionnaire

Added to 14 item instrument as recommended by Haddad et al

formal education beyond high school. Adverse health impacts were revealed by significantly lower levels of self reported health status among smokers.[5]

On a positive note, more than one-third of smokers had made at least one attempt to quit smoking in the previous 12 months (35.9%). Nonetheless, those highly addicted were less likely to have made such an attempt than those less addicted to nicotine.

Velicer reported typical proportions of for readiness to quit using the Velicer 'stage of change' as 40% in precontemplation, 40% in contemplation and 20% in preparation.[22] In this sample, only 16.6% of Arabic patients seen in general practice were in the preparation stage. However, proportions by gender were significantly different (21.3% of men vs. 12.0% for women). Using a validated instrument for Arabic respondents,[11] we have determined that the median readiness to quit score among Arabic smokers in Australia is 75.50 (range 15, low readiness to quit) to 90, high readiness to quit). It is important to note that 46.7% of current smokers did not recall any smoking cessation advice in the previous 12 months. This may is an indication a need for improvement in this area.

Limitations of this study

Methodologically, we are confident that our instrument was culturally appropriate and easy to complete. Our provision of identical versions in either Arabic or English is recommended to others undertaking such research. Nonetheless, our response rate was less than ideal for participating GPs (56%) although we achieved an acceptable response rate for patients (75.5% for women, 70.6% for men), probably minimising bias associated with choice of language. Another limitation to our study is the lack of validation of smoking status for which medical record audit or cotinine testing may be an answer in future research. (Cotinine is a nicotine metabolite used to measure the level of tobacco smoking.)

Conclusion

General practitioners who provide consultations in Arabic are likely to be seeing more smokers than their counterparts who offer consultations in English only. After decades of research with English speaking patients, ethno specific preventive care trials are now needed.

Conflict of interest: none declared.

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AFP CORRESPONDENCE afp@racgp.org.au