

SMOKING AMONG ADULT MALES IN AN URBAN COMMUNITY OF KARACHI, PAKISTAN

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Abstract. Smoking is the single most important avoidable cause of premature morbidity and mortality in the world. It is a major public health problem in Pakistan. The objectives of this study were to assess smoking status and its relationship to socio-demographic characteristics, and to determine the behavior of male smokers in an urban community in Karachi, Pakistan. A cross-sectional, household survey was conducted among 396 males, aged 15 years and above in January and February 2002. The overall prevalence of current smokers was 34%. By univariate analysis, the factors associated with smoking were younger age (15-29 years) (OR=4.2, 95% CI 2.1-7.3) as compared to older age (> 45 years), unmarried as compared to married (OR=3.1, 95% CI 1.9-5.4), educated for > 12 years compared to those with an education of 0-5 years (OR=2.0, 95% CI 1.2-3.3), and being student as compared to being an office/business worker (OR=3.2, 95% CI 1.8-5.4). The majority of smokers (55%) began smoking when younger than 25 years, smoked for more than 5 years (53%), smoked more than 10 cigarettes a day (55%) and smoked in public places (82%). Forty-two percent of the smokers used tobacco in other forms as well. Fifty-eight percent of smokers smoked to relieve anger and frustration and 30% smoked due to friend or peer pressure. In conclusion, smoking is a major problem in especially in younger age groups. There is an urgent need for health promotion and anti-tobacco education in combating the epidemic of smoking in Pakistan.

INTRODUCTION

The World Health Organization (WHO, 1979) has described tobacco smoking as an epidemic. It is estimated that there are about 1,100 million smokers worldwide; about one-third of the global population aged 15 years and above. Nearly 73% of smokers live in developing countries, where about 48% of males aged 15 years and above are smokers (WHO, 1997).

Smoking causes a substantially increased risk of mortality due to lung cancer, upper aerodigestive cancer, several other cancers, heart disease, stroke, chronic respiratory disease and a range of other diseases (WHO, 2002). Smoking also harms others, with definite health risks from passive smoking, especially lower respiratory infections, otitis media, lung cancer, nasal-sinus cancer and ischemic heart disease. Passive smok-

ing is also hazardous to the fetus during intrauterine life (WHO, 2002). Countries still grappling with infectious and mal-nutritional diseases traditionally associated with low income, are also facing a rising epidemic of cancers, respiratory and circulatory diseases caused by tobacco (Beyer *et al*, 2001). Unless immediate steps are taken to reduce the number of smokers, the number of deaths each year due to smoking will increase to 10 million within the next 30 years (WHO, 1996), of which 70% will occur in developing countries (WHO, 1999).

Smoking is a costly behavior. Apart from premature morbidity and mortality, smoking puts an extra financial burden on smokers, their families and the country as a whole. In China, smokers in the Minhang district spend 17% of their household income on cigarettes (Gong *et al*, 1995). In Bangladesh (Efroymsen *et al*, 2001), male cigarette smokers spend more than twice as much on cigarettes, as per capita expenditure, than on clothing, housing, health and education combined. In Karachi (Merchant *et al*, 1998), ex-smokers reported spending 25% of the total household income on this habit.

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In Pakistan, where over a third of the population is living in poverty (Ministry of Population Welfare, 2002), smoking is emerging rapidly as a major public health problem. Community-based surveys (Alam, 1998; Shah *et al*, 2001) conducted in different parts of the country reported 36% to 44% of adult males smoke. In Pakistan, the tobacco industry is expanding at a rate of 5% per year (Anonymous, 1993). Cigarette advertising appears to increase young people's risk for smoking. In Pakistan, tobacco companies are appealing to adolescents by using heroes (Simpson, 2002) (role models) and by offering costly prizes, such as gold and air tickets for overseas tours. Forty-seven brands of cigarettes are available in the country, containing some of the highest concentrations of tar and nicotine in the world (Asghar and Jan, 1989). Tobacco is also used in other forms in Pakistan, such as snuff, or chewed with pan and betel nut.

The WHO has listed the prevention and treatment of tobacco addiction as a priority for intervention in developing countries (WHO, 1979). Rising cigarette consumption in Pakistan warrants an early and effective public health response. Several reasons have been suggested for the rise of tobacco use in developing countries (Mackay, 1994), but there is limited knowledge about the distribution and characteristics of smokers in Pakistan, which could help to facilitate preventive actions and to formulate intervention strategies. The objectives of this study were to assess smoking status and its relation to socio-demographic characteristics, and to the behavior of male smokers in an urban community in Karachi, Pakistan.

MATERIALS AND METHODS

Data were collected through a cross-sectional household survey conducted in the months of January and February 2002 in an urban community in the central district of Karachi, Pakistan. Out of 447 houses visited consecutively, information was obtained from 396 household males, aged ≥ 15 years, and who gave consent to participate in the study. Amongst the remaining houses, 12 were locked and the residents were not at home. There were no eligible subjects in 9 houses, while in 30 houses, people refused to respond.

Trained interviewers administered a pre-tested, structured questionnaire. Informed verbal consent was obtained from each study participant. Respondents were assured of the confidentiality of the information, and every effort was made to ensure privacy. Socio-demographic information was obtained regarding age, marital status, educational level, occupational status and household monthly income. Regarding smoking status, respondents were asked: 'Do you smoke?' with possible responses being: 'Yes - current smoker or past smoker'; and 'Never smoker'. Those who were current smokers were interviewed regarding their smoking behavior, such as the age at which they started smoking, length of time as a smoker, number of cigarettes smoked per day, use of tobacco in other forms, and smoking at home and in public places. Questions were also asked about the reasons for starting smoking, whether they ever attempted to quit or wanted to quit smoking and a paternal history of smoking.

Never-smokers were defined as those who had never smoked; past-smokers were those who had smoked in the past but had stopped for at least the previous three months. Current-smokers were those who are at present were smoking any amount of tobacco, either regularly or occasionally. Due to the small number of past-smokers we merged this category into the category of never-smokers and termed them as non-smokers for the analysis.

The data was analyzed using the Statistical Package for Social Sciences (SPSS), version 10. Frequencies and percentages were calculated to see the distribution of smokers by socio-demographic characteristics and their smoking behaviors. The chi-square test and odds ratio, along with 95% confidence intervals, were calculated using simple logistic regression to see the relationship between smoking status and socio-demographic characteristics.

RESULTS

The socio-demographic characteristics of the study population are summarized in Table 1. The overall prevalence of smoking was 34%. In all, 35% of respondents were more than 45 years of age, 81% were married, 39% had either no school-

ing or to the primary level only, 38% had a household income of less than 10,000 Pakistani rupees per month and 38% worked in an office/business.

Using univariate analysis, significant associations with smoking were found with age (p-value < 0.001), marital status (p-value < 0.001), educational level (p-value = 0.002), and occupational status (p-value < 0.001). The odds of smoking in a younger age group (15-29 years) were more comparable to the older age (> 45) group (OR = 4.2, 95% CI 2.4-7.3). Unmarried people were more likely to smoke than married people (OR = 3.1, 95% CI 1.9-5.4). Respondents with an education of more than 12 years were more likely to smoke than those with an education of 0-5 years (OR = 2.0, 95% CI 1.2-3.3) and those who were students were (OR=3.2, 95% CI 1.8-5.4) more likely to smoke than those who worked in offices/businesses. No significant association was found between the different groups of household income regarding current smoking status (Table 1).

Smoker's behaviors are presented in Table 2. Out of the total smokers, more than half (55%)

began smoking before 25 years of age, smoked for more than 5 years (53%), and smoked more than 10 cigarettes a day (55%). Forty-two percent of smokers also used tobacco in other forms. Large numbers of smokers smoked in public places (82%) and in their homes (48%). Thirty-eight percent of smokers reported having a positive paternal smoking history. Overall, 34% of smokers had attempted to quit, and 36% wanted to quit.

The reasons for starting to smoke among current smokers are shown in Fig 1. The most common reasons for starting to smoke were to relieve anger and frustration (58%), to concentrate on work (55%), and because of friends or peer pressure (30%).

DISCUSSION

The National Health Survey of Pakistan (NHS,P) (Pakistan Medical Research Council, 1998), reported that 29% of males (15 years and above) were smokers, while a recently published

Table 1
Association of socio-demographic characteristics of male smokers in an urban community of Karachi, Pakistan.

Variables	Total (n)	Smokers (%)	Odds ratio (95% CI)	Level of significance (p-value)
	396	135 (34)		
Age (in years)				
> 45	138	30 (22)	1.0	
30 - 44	147	45 (31)	1.6 (0.9-2.7)	
15 - 29	111	60 (54)	4.2 (2.4-7.3)	< 0.001
Marital status				
Married	322	93 (29)	1.0	
Unmarried	74	42 (57)	3.1 (1.9-5.4)	< 0.001
Education level				
0 - 5 years of school	156	48 (31)	1.0	
6 - 12 years of school	126	33 (26)	0.8 (0.5-1.3)	
> 12 years of school	114	54 (47)	2.0 (1.2-3.3)	0.002
Households income (rupee)				
< 5 thousand/month	152	49 (32)	1.0	
5 - 10 thousand/month	80	35 (44)	0.6 (0.3-1.1)	
> 10 thousand/month	164	51 (31)	1.1 (0.6-1.7)	0.131
Occupational status				
Office/business	151	38 (25)	1.0	
Manual	144	45 (31)	1.4 (0.8-2.2)	
Student	101	52 (52)	3.2 (1.8-5.4)	< 0.001

Table 2
Smoking behavior among male smokers in an urban community of Karachi, Pakistan.

Smoker's behavior	Number (n = 135)	Percentages (%)
Age began smoking		
<25 years	74	55
25-40 years	51	38
> 40 years	10	07
Duration of smoking		
≤ 5 years	62	46
> 5 years	72	53
Number of cigarettes smoked		
< 5 per day	30	22
5 - 10 per day	31	23
> 10 per day	74	55
Use of tobacco in other forms	57	42
Smokes at home	65	48
Smokes in public places	111	82
Ever tried to quit smoking	46	34
Want to quit smoking	49	36
Positive paternal smoking history	51	38

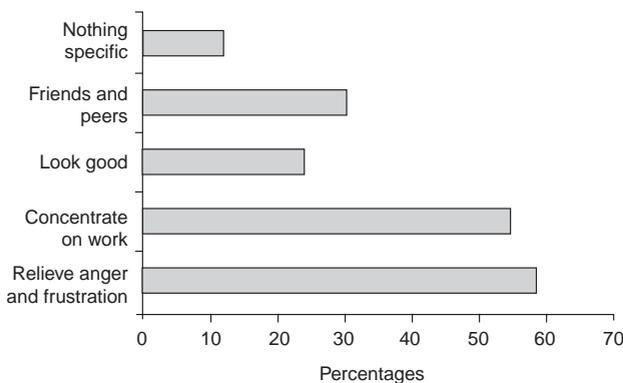


Fig 1—Reasons for starting to smoke among smokers in an urban community of Karachi, Pakistan (each person may have one or more reasons).

study from northern Pakistan (Shah *et al*, 2001) showed the prevalence of smoking among adult males as 44%. In our study, 34% of respondents were current smokers, which is higher than that documented in the NHS,P. A possible reason might be that there has been an ongoing rise in smoking prevalence in developing countries (WHO, 1997; 1999), including Pakistan, since the NHS,P was conducted in 1992. Our figure, how-

ever, is lower than that documented in northern Pakistan. In our study, the possibility of under-reporting may exist. Smoking is not socially accepted in Pakistan. Some study participants, particularly the young, might have hidden their smoking habit, during the interview, in the presence of other family members.

In different parts of the world (Pakistan Medical Research Council, 1998; Jarallah *et al*, 1999), the highest prevalence of smoking is found among the younger age groups and falls steadily in older age. These findings are consistent with our study where smokers were more than four times likely to be in a younger age group. Among the study participants who were unmarried, more than half were smokers, a highly significant when compared to married respondents ($p < 0.001$).

The level of education has been associated with smoking in a large number of studies (Narayan *et al*, 1996; Merchant *et al*, 1998). In those studies, an inverse relationship was seen between the level of education and the prevalence of smoking. In contrast, our study showed a significantly higher smoking prevalence among the more highly educated ($p = 0.002$) consistent with a study done in Riyadh, Saudi Arabia (Saeed *et al*, 1996). Maziak and Mzayek (2000) in Aleppo-Syria and Hussain *et al* (1995) in Pakistan documented the rising prevalence of smoking among students. In our study, students were more than three times more likely to be smokers than respondents who had office/business occupations. The NHS,P (Pakistan Medical Research Council, 1998) reported that the majority of smokers belonged to low-income groups. Our study showed no significant association between the different income groups. Possible reasons for this may include the larger sample size of the NHS,P, and it collected information from both urban and rural areas.

There was a strong association between duration smoked, the number of cigarettes smoked, and the development of different diseases (Taioli and Wynder, 1991). Most smokers first acquired their habit during their pre-teen or teenage years (Elders *et al*, 1994). In a study from Pakistan, the average age students started smoking was 17 years, with 88% having started before their 21st birthday (Hussain *et al*, 1995). In our study, the

majority of smokers started smoking before 25 years of age, had smoked more than 5 years and smoked more than 10 cigarettes per day. These findings are comparable with a survey conducted by Shah *et al* (2001) where men reported an average daily consumption of 14 cigarettes; the majority of them started smoking before age 25 years.

In South Asia, tobacco is also used in other forms such as, snuff, chewed with betel nut and pan (Smokeless Tobacco - ST) which has been documented as hazardous, and cause oral and esophageal cancer (Phukan *et al*, 2001; WHO, 2002). ST is also associated with an increased risk of ischemic heart disease and stroke deaths (Bolinder *et al*, 1994). A study from Delhi India (Narayan *et al*, 1996), noted that among smokers, 53% of men smoked only cigarettes while the rest also used tobacco in other forms. Similarly in northern Pakistan, the majority of male smokers also used moist snuff (Shah *et al*, 2001). In our study population, more than 40% of smokers used tobacco in other forms as well.

In Pakistan, the family value system exerts an important influence on an individual's behavior and attitude. Parents are supposed to be role models for their children. It is a well-established fact that children, whose parents smoke, are more likely to smoke in their adult life. In Syria (Maziak, 2002), students from families with parents and / or siblings who smoked were 4.4 times more likely to be current smokers than those from non-smoking families. Khuwaja *et al* (2004), in Hyderabad, Pakistan, found that 36% of school children had a positive paternal smoking history, and among them 76% of the fathers smoked in the presence of their children. There is ample evidence of the health hazards of passive smoking (Lam, 1998; He *et al*, 1999). In our study, a paternal history of smoking was present in substantially higher number of smokers. It is alarming that almost half of smokers smoked in their homes, and over 80% of smokers smoked in public places and at work. This not only provides a bad example for their children and other family members but also provides a potent risk factor for a large number of chronic and crippling diseases for their family members, work mates and colleagues, in particular, and for society in general.

Amongst the students of Karachi, 50%

smoked for pleasurable relaxation and 38% for tension reduction (Ahmed and Jafarey, 1983), the major influence for initiation was their friends (Hussain *et al*, 1995). In our study, the most common reasons to start smoking, were to relieve anger and frustration and to help concentrate on work. These findings indicate that a large number of people may suffer from psychosocial problems, such as anxiety, frustration, nervousness or being over-burdened at work. A large number of smokers started to smoke due to friends or peer pressure and to 'look good'. These findings suggest that tobacco companies, which have put a heavy influence on advertising tobacco to youth through their heroes and role models, have been successful.

This study indicates that majority of smokers began smoking in their early life, and have a prolonged exposure to smoking. Major efforts should be directed toward implementing health education programs for children and adolescents at schools and colleges by using various media as a platform. The study results also make a strong case for educating people about the hazards of passive smoking, discouraging smoking at home, particularly in the presence of children, and restricting smoking in public places and at work.

More research is required to explore the various factors responsible for smoking among different populations. Intervention studies should be conducted to bring change and to monitor changes in the prevalence, and the various causes for initiating, continuing and quitting smoking, and to evaluate change in behavior and attitude towards smoking. The most effective methods for anti-smoking programs should be explored.

It is important to implement and monitor strict environmental and legislative initiatives to ensure the success of tobacco control activities. Prohibition of cigarette sales to youngsters, prohibition of smoking in public places, and a ban on smoking advertisements are important steps in this regard.

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