

## FACTORS AND BEHAVIOUR CONCERNING CORONARY HEART DISEASE IN URBAN MALAYSIAN WORKERS

John T Arokiasamy

Department of Social and Preventive Medicine, Faculty of Malaya, 50603 Kuala Lumpur, Malaysia

**ABSTRACT:** A group of 265 urban private sector workers in Kuala Lumpur and adjacent Petaling Jaya responded to a self-administered questionnaires. Their knowledge of cardio-pulmonary resuscitation, risk factors for and preventive measures against cardiovascular disease and when these should be started are relatively weak, though knowledge on symptoms of heart a attack are satisfactory. Relatively more males than females are current smokers and consumers of alcohol. Males tended to start smoking and drinking in their teen years while females tended to do so later in their non-teen years. (JUMMEC 1996 1(1):33-36)

### Introduction

Cardiovascular disease is a leading cause of morbidity and mortality in developed countries and is increasing in importance in developing countries, emerging as a prominent public health problem (1,2). In many developing countries deterioration in health behaviour related to factors such as smoking and alcohol consumption are being noticed, but these changes are inadequately documented. Developing countries are also faced with a continuing burden of communicable diseases. This, coupled with the rising burden of cardiovascular disease, means that many of these countries have to struggle with a double burden often stressing the already limited resources.

In Malaysia, available data indicate a rising trend in the importance of cardiovascular disease (3). In 1991, it ranked first in the ten principal causes of deaths and fourth in the ten principal causes of admissions to Government Hospitals in Peninsular Malaysia (4). Most of the cardiovascular deaths in hospitals are due to coronary heart disease (CHD) (5).

Malaysia has recently embarked on encouraging a healthier lifestyle among its people. For this to be successful, it is necessary to have information about the existing knowledge and practices relating to coronary heart disease in different community groups. This paper describes some selected aspects of these among a group of urban management/executive and clerical/supportive personnel working in the private sector of Kuala Lumpur and adjacent Petaling Jaya.

### Materials and Method

The study was undertaken in Kuala Lumpur, the Fed-

eral Capital of Malaysia and the adjacent area of Petaling Jaya. A group of private business firms were identified and permission obtained to conduct the study. The sample consisted of all managerial/executive and clerical/support personnel in these firms.

A set of pre-tested self administered questionnaires was delivered to a liaison officer in each of the firms for distribution to the respondents. A date was fixed for a team of three to four research staff to visit the firm to check the questionnaires for completeness and measure the respondents' height, weight and blood pressure. As the latter are not the focus of this paper, details on how they were measured are not presented here. The liaison officer of the firm was responsible for ensuring that all the respondents were present on the day of the visit. A total of 265 workers formed the study group. There were no non-respondents. The data was processed and analysed using a personal computer with appropriate software packages. The Chi-squared test was applied for qualitative data, with Yates correction for 2 by 2 tables. Fisher's exact test was used in the situation where the expected frequencies were small. Statistical significance is based on *p*-values and a significance level of 0.05.

### Results

Among the 265 respondents studied, 160 (60.4%) were males while the remaining 105 (39.6%) were females. Most of the respondents (43%) were aged 30-39 years.

Multiple responses were given on what are common symptoms of a heart attack. Chest pain was cited by 78.6% of the respondents, breathing difficulty by 39.3%, sweating by 16.4%. The rest of the responses were either vague or irrelevant. 21.4% of the respondents

did not cite chest pain as a symptom of a heart attack. Table I shows that more males than females are likely to have experienced chest pain ( $p = 0.039$ ); know how to administer artificial respiration ( $p < 0.001$ ); and know how to administer cardio-pulmonary resuscitation ( $p = 0.002$ ). However, the proportion of males knowing the two latter procedures is small. Nearly half of both males and females would seek help if either they or

not know or that heart attacks could not be prevented. These responses were similar among both males and females. There were 23.4% of respondents who stated that preventive measures are best started from birth, while a further 6.8% cited 'under 15 years'. The rest gave varying ages from 15 years onwards with 33.2% saying that prevention should be started between 30 and 39 years of age.

**Table I: Knowledge and Practices Relating to Heart Attacks and Chest Pain by Sex**

Characteristic	% Male (n=160)	% Female (n=105)	p-value
<b>1. Experienced chest pain?</b>			
Yes	41.9	28.6	0.039
No	58.1	71.4	
<b>2. Reaction to chest pain</b>			
Panic	3.8	8.6	n.s
Worry	18.8	15.2	
Seek help	49.4	48.6	
Wait and see	23.8	20.0	
Ignore	2.5	2.9	
Others/don't know	1.9	4.8	
<b>3. Action taken if someone has a heart attack</b>			
Seek help nearby	27.5	33.3	n.s
Seek professional help	54.4	55.2	
Administer first aid	17.5	11.4	
Walk away	0.6	0.0	
<b>4. Know how to give artificial respiration</b>			
Yes	20.6	3.8	0.0002
No	53.1	72.4	
Not sure	26.2	23.8	
<b>5. Know how to give cardio-pulmonary resuscitation</b>			
Yes	8.1	1.0	0.0015
No	74.4	91.4	
Not sure	17.5	7.6	

n.s. = not significant

others experienced chest pain or suspected a heart attack.

Multiple responses were given as to what are the risk factors leading to heart attacks. Stress or worry (52.7% of all respondents), smoking (41.2%), lack of exercise (31.7%), being overweight (31.3%) and improper diet (22.9%) were the five most common risk factors identified. Risk factors such as high blood pressure and alcohol consumption were cited by 16.8% and 18.3% of the respondents respectively. From the foregoing, it appears that their knowledge of the risk factors for coronary artery disease is relatively weak.

About 90% of all respondents stated that heart attacks can be prevented, while the rest either said they did

**Table II: Smoking and Alcohol Consumption Characteristics by Sex**

Smoking	% Male (n=160)	% Female (n=105)	p-value
<b>1. Current smoking status</b>			
Smoker	40.6	7.6	<0.001
Ex-smoker	10.0	2.9	
Non-smoker	49.4	89.5	
<b>2. Current and ex-smokers:</b>			
	(n=81)	(n=11)	(n=92)
<b>Age started smoking</b>			
Teen years	48.1	9.1	0.021
After teen years	51.9	90.9	
<b>Alcohol Consumption</b>			
% Male (n=160)	% Female (n=105)	p-value	
<b>1. Current alcohol consumption status</b>			
Drinker	47.5	14.3	<0.001
Ex-drinker	10.6	3.8	
Non-drinker	41.9	81.9	
<b>2. Current and Ex-drinkers</b>			
	(n=93)	(n=19)	(n=102)
<b>Age started</b>			
Teen years	41.9	15.8	0.018
After teen years	54.8	68.4	
Not known	3.2	15.8	

Common preventive measures mentioned (multiple responses) were exercise (47.1% of respondents), healthy diet (35.2%), avoiding smoking (22.6%), avoiding stress (21.5%). Regular medical check-ups and avoiding alcohol were cited by 10.3% respectively. As to types of food that could help prevent heart disease, fruits and vegetables were cited by 38.7% of respondents, diets low in cholesterol or fat by 11.3%, high fibre diet by 10.5%, and fish and chicken by 9.3%. It appears that knowledge about preventive measures against heart disease too is relatively weak among the respondents.

Table II shows more males are current smokers and drinkers. Among both males and females, there are a slightly larger proportion who currently consume alcohol than those who currently smoke. The males tend to have started smoking and consuming alcohol in their teen years, whereas the females tended to do so later in life.

## Discussion

Although coronary heart disease is common in middle aged and elderly persons, the atherosclerotic process starts in adolescence or in young adulthood (6). The major risk factors for coronary heart disease and the behavioural patterns leading to them also begin in youth. While the majority in this study felt that heart attacks are preventable, about 40% felt that preventive measures can be started after the age of 30. Only 23% indicated that these should be initiated from birth. These findings indicate an inadequate knowledge as to when preventive measures need to be initiated. This problem needs to be addressed fairly urgently since these respondents are either already married and parents, or in age groups likely to get married soon. For prevention programmes to have an impact on the incidence of coronary heart disease in our future generations, it is necessary for it to be implemented among the young. This message of prevention from an early age must be consistently conveyed to the entire community.

Emergency care through cardiopulmonary resuscitation (CPR) can play an important role in reducing mortality. The findings in this study suggest a serious lack of knowledge about CPR in those being studied and possibly among those in the rest of the community. Less than 10% had learnt this technique through a professional course and only 5% know how to administer it. Lay person Basic Cardiac Life Support training programmes need to be regularly organised so that people in the community can learn how to administer cardiopulmonary resuscitation.

Cigarette smoking is one of the modifiable risk factors that contributes to the development of atherosclerosis and to the clinical manifestations of vascular disease. Numerous studies including that by Hjermann (7) have shown that in healthy middle aged men who are at risk of coronary heart disease, smoking cessation and diet modification to a more "healthy" one reduces a first event myocardial infarction and sudden death. Smoking among females is a growing concern as they are at increased risk of coronary heart disease, especially in those who use oral contraceptives, and in those women with other risk factors such as high blood pressure and elevated total serum cholesterol levels. In this study, the prevalence of smoking is less among the women, with most of them starting after their teens. This is in contrast to the men who typically tended to start smoking in their teens. Thus while anti-smoking efforts are best directed at all ages they still need to primarily target youths in their teens as well as the years following the teens.

Alcohol consumption is a social and health problem in many communities and in Malaysia this is also the case, especially among the males. This is reflected in this study,

where males not only predominate but also tended to be heavier drinkers compared to the women. That light to moderate alcohol intake may be protective against CHD is unsubstantiated, while heavy intake increases the risks of CHD (2). In Malaysia, alcoholism and problems related to it are not yet national public health issues as compared with drug addiction and communicable diseases (8). Nevertheless the social and health concerns of alcohol consumption have been recognised and selective actions have been introduced (8). These need to be continued and further strengthened so that it does not become a larger problem.

An interesting observation in this study is that the proportion of the respondents who are current smokers is lower than that for current drinkers. The reasons for this is unclear, though it is possible that anti-smoking messages which are being given greater publicity in the media compared to anti-alcohol measures may be contributory.

In this study, some characteristics and factors, including selected lifestyle factors relating to coronary heart disease have been looked into. The population approach to prevent and control cardiovascular disease includes the strategy of altering these lifestyles and environmental characteristics, and their social and economic determinants (1). This approach could, if implemented promptly, be effective and less demanding on the limited resources of developing countries. There is evidence that coronary heart disease is declining in certain industrial countries like America as a result of this approach (9). There have also been evidence of feasibility of reducing risk factor levels in communities by the adoption of healthier lifestyles (10, 11). These provide justification for timely preventive action especially in those countries where the problem of cardiovascular diseases is low or at an early stage (12, 13). With Malaysia's recent policy in encouraging healthier lifestyles, it is hoped that groups such as the one being studied will also benefit taking into account their peculiarities. The findings of this study could benefit those planning specific programmes for urban groups similar to the one that has been studied.

## Acknowledgements

This study was supported by Research and Development Funds under Program No. 3-042. The author wishes to thank the staff of the Department of Social and Preventive Medicine for their valuable assistance and contributions.

## References

1. W.H.O. Community prevention and control of cardiovascular diseases. Report of a WHO Expert Committee,

- Technical Report Series 732, Geneva:WHO, 1986.
2. W.H.O. Prevention of coronary heart disease. Report of a WHO Expert Committee, Technical Report Series 678, Geneva:WHO, 1982.
  3. Lo EKC. Epidemiology of cardiovascular diseases in Malaysia, Paper presented in the seminar on "Nutritional Aspects of Dietary Fats". Institut Kimia Malaysia, Kuala Lumpur, 1985.
  4. Ministry of Health, Malaysia. Annual Report 1991. Kuala Lumpur: Ministry of Health Malaysia, 1992.
  5. Ministry of Health, Malaysia. Indicators for monitoring and evaluation of strategy for Health for All by the year 2000. Information and Documentation System Unit, Kuala Lumpur: Ministry of Health Malaysia, 1990.
  6. Kagan AR. and Uemura K. Atherosclerosis of the aorta and coronary arteries in five towns. Bulletin of the World Health Organization 1976; 53: 5-6.
  7. Hjermmann I. Intervention of smoking and eating habits in healthy men carrying high risk for coronary heart disease. The Oslo study. Acta Med Scand [Suppl] 1981; 651: 281-284.
  8. W.H.O. Country Profile - Malaysia in Report of Regional Workshop on Alcohol related problems, Manila August 8 - 12, 1983. Regional Office for the Western Pacific, Manila:WHO Philippines, 1984.
  9. Pisa Z and Uemura K. Trends of mortality from ischaemic heart disease and other cardiovascular diseases in 27 countries, 1968-1977. World Health Statistics Quarterly, 1982; 35 (1): 11.
  10. Farquhar JW. The community-based model of lifestyle intervention trials. Am J Epidem 1979; 108 (2): 103.
  11. Puska P, Tuomilehto J, Salonen J, et al. Changes in coronary risk factors during comprehensive five-year community programme to control cardiovascular diseases (North Karelia Project). BMJ. 1979; 2: 1173.
  12. Dodu SRA. Coronary heart disease in developing countries: the threat can be averted. WHO Chronicle 1984; 38 (1): 3-7.
  13. Tuomilehto J, Puska P, Salonen J, et al. Controlling risk factors in cardiovascular diseases. Ann Acad Med 1980; 9 (4): 443-455.