

ACCESSIBILITY TO KNOWLEDGE AND INFORMATION ON RISK FACTORS AND PREVENTION OF CARDIOVASCULAR DISEASES AND PREVENTIVE BEHAVIOURS AMONG THE RESIDENTS AGE 30 YEARS AND ABOVE IN MALE-MALDIVES

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ABSTRACT: Cardiovascular disease is the leading cause of death and disability in the Maldives for 25-30% of all deaths. Approximately 80% of cardiovascular diseases can be prevented and low-cost preventive strategies can save the lives of millions of people for whom treatment would be unaffordable either at individual or at national level. In this cross sectional descriptive and analytical study we look at the accessibility to information knowledge of risk factors and preventive behaviour of CVD among residents above the age group 30 year living in Male' Maldives. The study also describes socio-demographic characteristics, source of information on cardiovascular disease risk factors and preventive behaviours. The study involved 399 equal number of male and females and a self administered questionnaire was used to collect data. The results showed that about 52% of the respondents had moderate knowledge about prevention and risk factors of CVD. The survey showed that the knowledge had a significant association with marital status ($p<0.004$) and occupation ($p<0.001$). Respondents from the fishing and agriculture sector had less knowledge. There was a significant association between level of knowledge score and rate of physical activities. And the main source of information on CVD risk factors and preventive behaviours were from TV. From the results it showed that only 12.1% of the respondents were consuming the recommended amount of fruits and vegetables, only 26.1% of the respondents were practicing 30 minutes of vigorous physical activity at least 3 times a week and 25.6% of the respondents were current smokers. The results also showed that respondents with history of medical illness were eating more fruits and vegetables. Since mass media has been the main source of health, there is a need to engage policy makers and other relevant sectors in order to get broad support for implementing mass media health promotion activities and networking and partnership with different sectors. Also to strengthen capacity at all sectors to develop and implement NCD prevention programmes.

Keywords: cardiovascular diseases, preventive behaviours, risk factor

INTRODUCTION: Cardiovascular diseases are globally the number one cause of death. An estimated 17.5 million people died from cardiovascular disease in 2005¹. Maldives during the last few decades has been experiencing a rapid socio economic development with the changes in demography, fast social and economic development, rapid urbanization, changes in food habits and lifestyles, Maldives is experiencing significant increases in hypertension, diabetes, obesity, tobacco use, and cardiovascular diseases². One major goal in the Maldives Health Master plan 2006-2015 is "To ensure people have appropriate knowledge and behaviours to protect and promote their health"³. Limited data are available on the risk factors that contribute to growing number of noncommunicable diseases (NCD) which is estimated at 55% of deaths in Maldives.

Adopting healthy behaviours such as eating 5 portions of fruits and vegetable a day, doing 30 minutes of vigorous physical activity 3 or more times a week and not consuming tobacco can prevent or control the adverse effects of these diseases⁴. Cardiovascular Disease (CVD) risk factor awareness and knowledge are believed to be prerequisites for adopting healthy lifestyle behaviours⁵. This study aimed at conducting a research in the capital city of Maldives on potential risk factors for CVDs such as family history, food habit, tobacco consumption, physical inactivity and other lifestyle related risk factors. In addition the study attempted to assess the existing knowledge as well as accessibility to necessary information on the risk factors that lead to CVDs as well as actual practice of CVD related healthy behaviours. In Maldives the main approaches to promoting healthy lifestyles have been the

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production and distribution of IEC materials⁴⁾ and mass media campaigns, largely through several radio channels and national television channels. In addition many homes have access to cable TV. The daily newspapers with wide circulations are distributed from Male' to the other islands. Each newspaper has a weekly health page focusing on the most recent and important health issues for the public. Communication campaigns play an important role in disease prevention and health promotion. However designing effective campaigns about health is a difficult role⁶⁾. But there many constraints to the successful implementation of this health promotion programmes. There is a need to pre-test and adapt the materials according to the target audience. There is a shortage of skilled staff, lack of evidence base, inadequate monitoring and evaluation and emphasis on health education materials rather than behaviour change communication⁷⁾. However, in spite of campaigns aimed at educating people about healthy living, there are indications that gaps exist between different groups in society, with some groups able to benefit more from these campaigns than others⁸⁾. Studies indicate that although doctors are knowledgeable about the risks of CVDs associated with tobacco smoking, they are not sufficiently prepared to help their patients to stop smoking. Even though physicians identify a substantial number of smokers during consultations, for example, many patients do not receive counseling to help them quit. Smoking cessation is the most cost-effective intervention for patients with documented CVDs, and efficacious programmes have been developed. The challenge is to get these programmes more widely used, and doctors and nurses should seize every opportunity to encourage patients to stop smoking⁸⁾. Without action to address the causes, deaths from NCDs may increase by 17% between 2005 and 2015.

MATERIALS AND METHODS: The study design was a crosssectional descriptive and analytical study of accessibility to knowledge on risk factors and prevention of cardiovascular diseases

and preventive behaviours of residents above age 30 years of age in Male-Maldives. The population in this study consisted of 399 participants. There were equal number of male and female from the age group 30 years and above and living in Male-Maldives. Data were collected using a self administered questionnaire translated into Maldivian. The questionnaire was pretested in Male'. Reliability was calculated on the knowledge questions and a Cronbach's alpha of 0.904 was obtained with the intra class correlation coefficient being highly significant ($p < 0.001$) Data were analyzed using SPSS version 16. Independent and dependent variable was done using Chi-square test and continuous variables were done by Anova.

RESULTS :

Socio-demographic characteristics: Among the respondents 50.4% were male and 49.6% were female. There were total of 399 respondents. The majority of respondents (61.7%) were from age group 30-40 years. Only a few were from the age group 60 years and above(4.5%). Education status of the subjects showed that majority of respondents (46.6%) finished secondary school and 19.5% finished primary school. 9% and 10.5% of the respondents completed diploma and graduate/postgraduate. And 10.5% respondents completed non formal education. Occupation of the majority of respondents 42.7% worked in the government sector 35.4% worked for the private sector, only a small percent of the respondents were from the fishing and agriculture (3.8%). The rest were house keepers (11.8%) and unemployed (6.3%). 12.8% of respondents reported having CVD related illness.

Knowledge on CVD risk factors and CVD preventive behaviours: Out of the 23 questions on knowledge, majority of them (51.9%) scored 11 to 15 points out of 23 points. Only 4.8% of respondents scored 0-5 points. None of the respondents were able to score the full 23 points. And 18.8% percent of the respondents scored 16-19 points. The mean score of the respondents were 12.2 with a standard deviation (SD) of 3.8..

Accessibility to information on CVD risk factors and preventive behaviours: Majority of

respondents(41%) responded that their main source of information was from CVD TV, and 26.1% responded radio, followed by doctors and health workers (9.8%), internet (7.8%), leaflets (6.3%), newspapers (4.8%) and posters (3.8%)-table 4.3.Among the respondents (59.9%) didn't have easy access to information on CVD, and 33.3% had easy access to the CVD risk factors and preventive behaviours.

Reported practice to practice of CVD related healthy behaviours. Only (12%) of respondents consume the recommended amount of fruits and vegetables portions a day which is more than 4 portions a day. Only 26.1% of the respondents practiced the recommended level of CVD related physical activity work and leisure combined for 30 min 3 or more times a week. About 26% of the respondents were current smokers as shown in table.

Association between socio-demographic factors and knowledge on CVD risk factors :

The results show there is a significant association between marital status, occupation and knowledge on CVD risk factors and preventive behaviours. There were no significant association between age, gender, history of CVD related disease or educational level. Males scored slightly higher than females. Awareness of risk factors was lower in the older age group above 60 years. (Table 1)

Association between knowledge on CVD preventive behaviours and practice of recommended level of physical activities:

There was a significant association between knowledge and the level of physical activities. The chi-square value 8.28 with ($p=0.04$) People with more knowledge of CVD risk factors tended to follow less the recommended level of physical activity. (Table 2)

Association between knowledge on CVD risk factors and physical activity: Results show that there was a significant association between knowledge and the level of physical activities. The chi-square value 8.28 with a P-value of 0.04. People with more knowledge of CVD risk factors tended to follow less the recommended level of physical activity.

Association between knowledge on CVD preventive behaviours and risk factors and smoking:

There was no significant association between knowledge and smoking although people with less knowledge tended to have higher rate of smoking than those with higher knowledge.

Association between accessibility of information on CVD risk factors and preventive behaviours and knowledge on CVD risk factors and preventive behaviours:

There was a significant association between accessibility of information on CVD risk factors and preventive behaviours and knowledge on CVD risk factors and preventive behaviours. The mean score of people who had information was 12.6.

Association between Socio Demographic factor and practice of physical activitie:

There was a significant association between gender, marital status, history of CVD related medical illness and practice of recommended level of physical activities. Males (31.8%) tend to take part more in the recommended level of physical activities, also the rate of the physical activity was higher among the divorced/separated/widowed group (40.7%) and respondents with history or CVD related medical illness (27.6%). Age, education level and occupation had no significant association between practice of recommended level of physical activities. However, the younger age group (30-40 years) were more involved in the rate of recommended physical activity (28.9%), while the lower rate was from the age group 41 to 50 years (20.0%).

Association between socio-demographic factors and practice of CVD related healthy eating:

There was a significant association between respondents with CVD related medical illness and consumption of CVD related healthy eating behaviour. It showed that those who were at risk were eating healthier.

Association between Socio Demographic factor and Smoking:

There was a highly significant association ($P<0.001$) between gender, occupation and consumption of tobacco. The highest rate of smoking (46.7%) was in those employed in agriculture and fishing sector while

the lowest rate (13.5%) was the government employees. More males (38.3%) smoked than females (12.6%) which is highly significant ($p < 0.001$). There was no association between age, education, marital status or history of CVD

related medical illness and consumption of tobacco. However consumption of tobacco were lower among the graduate, postgraduate and diploma level education group.

Table 1 Association between socio demographic factors and knowledge of CVD

Factor	N	Mean*	SD	SE	F	P value
Age (N= 399)					1.53	0.206
30-40	246	12.0	3.7	0.2		
41-50	95	12.7	3.8	0.4		
51-60	40	12.7	3.8	0.6		
>60	18	11.2	5.0	1.2		
Gender					1.77	0.184
Male	201	11.9	3.9	0.3		
Female	198	12.4	3.6	0.3		
Marital status (N = 399)					5.6	0.004
Never married	67	11.4	4.2	0.5		
Married	273	12.6	3.5	0.2		
Divorced/separated/widowed	59	11.1	4.1	0.5		
Occupation					4.8	0.001
government sector	170	12.5	3.4	0.3		
private sect	141	12.6	3.6	0.3		
Agric	15	8.9	5.3	1.4		
Housework	47	11.1	3.9	0.6		
Unemployed	25	11.8	4.5	0.9		
History of CVD related illness					2.128	0.145
Yes	51	12.9	3.7	0.5		
No	348	12.1	3.8	0.2		
Education level					0.959	0.453
Primary level	78	12.2	4.0	0.5		
O level	160	12.0	3.6	0.3		
A level	26	13.0	3.2	0.6		
Diploma	36	12.6	2.7	0.5		
Bachelors degree	23	13.3	2.7	0.6		
Masters	19	11.3	4.7	1.1		
Basic education	57	11.8	4.5	0.6		

Table 2 Association between knowledge on CVD risk factors and physical activity

Factor	Following recommended level of physical activity N (%)		Chi-square	p-value
	No	Yes		
Knowledge score			8.28	0.04
0-5	12(63.1)	7(36.9)		
6-10	64(15.7)	34(34.7)		
11-15	157(75.8)	50(24.1)		
16-19	62(82.7)	13(17.3)		

DISCUSSION: It is important to find out the accessibility to knowledge of the information among the target population regarding cardiovascular diseases since the cause of 55% of deaths in Maldives is due to Non Communicable disease . And as much as 80% of these deaths could be prevented through healthy diet, physical activities and not smoking. Without adequate knowledge and information on these preventive behaviours and risk factors it will be difficult to practice the CVD related healthy behaviours. According to the NCD risk factor survey 2004, which was the landmark study for knowing the situation of the people living in Male', little or nothing is known about the physical activity, dietary habits and lifestyle related behaviour that may have accounted for the increase in cardio vascular diseases in Maldives¹⁰. Cardiovascular disease has been the major cause of death in Maldives accounting to 25%-30% of deaths every year¹. From the knowledge score almost half of the respondents (51.9%) had moderate knowledge on risk factors and preventive behaviours of CVD. Also it was found out that health leaflets and health posters weren't a good source of information on CVD. Only a small percentage of people used posters and health leaflets to get the information. This may be due to poor quality of the production of these materials. In the survey of non communicable disease which was conducted on 2004 showed 91% of men and 95% of women were inactive at work, the results obtained from this study showed that 72.8% of men and women were not practicing 30 minutes of more of vigorous physical activity 3 times a week. The results also showed that men were more involved in recommended level of physical activity Also it was found that that knowledge of CVD risk factors was also higher among younger (30-40), this may be due to education and more exposure to information sources. The results showed that respondents with less knowledge score were involved in vigorous physical activity for at least half and hour 3 times a week. And the respondents with more knowledge on CVD risk factors were less physically active. Since physical

activity was work and leisure combined this could be that the respondents with more knowledge were in jobs that required less physical activity or due to the nature of their work they didn't have time to engage in physical activity. This also shows that knowledge is only the first steps in behaviour change cycle but knowledge alone is not enough to change behaviour. The results showed that there is a significant association between accessibility to information on CVD risk factors preventive behaviours and knowledge on CVD risk factors and preventive behaviour. Television has proved to be the main source of information on CVD risk factors and preventive behaviours. TV/Radio shows broadcast, series of exercise programmes in the popular morning show. Studies have shown that mass media campaigns enhance improvements in attitude toward healthy behaviour, such as better diet, exercise and smoking cessation¹¹. There is a need for advocacy, communication and community mobilization focusing on behavioural change. The health materials programmes should be more focused on behaviour change and quality of the production should also be improved. Since mass media has been the main source of health, there is a need to engage policy makers and other relevant sectors in order to get broad support for implementing mass media health promotion activities and networking and partnership with different sectors.

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