

ASSESSMENT OF CAPACITY FOR CARDIOVASCULAR DISEASE CONTROL AND PREVENTION IN THAILAND: A QUALITATIVE STUDY

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Abstract. The present study explored community members' knowledge and perceptions about cardiovascular disease (CVD), risk factors and prevention, and identified the current capacity of primary care providers to manage and control CVD at the provincial level. A qualitative study, including in-depth interviews and focus group discussions, was conducted in Suphan Buri Province, Thailand. Participants included community members, CVD patients and healthcare providers in health centers and hospitals. The results showed that community members had little knowledge about the symptoms and signs of heart attack or stroke. They perceived that existing health centers and community hospitals were not sufficiently equipped to treat CVD patients. Primary healthcare workers reported that they lacked skills to manage heart disease, particularly emergency care. Physicians said that they had too little time to educate patients and felt that medical schools should update their curricula, including practical training on CVD management in a low-resource setting. Nurses reported that they had inadequate training in health education for the prevention of CVD. There was a problem of inadequate feedback mechanisms in the existing referral system for continuing improvement. All of the health professionals agreed that more community participation and the involvement of non-health sectors and non-government organizations were needed in the national CVD control program. In conclusion, capacity building for strengthening CVD prevention and control at the primary care level should be implemented. The existing training and education systems have to be revised with an orientation towards health promotion and disease prevention. Publicity of CVD burden and preventive measures, and local programs, should be implemented with community participation.

INTRODUCTION

Cardiovascular disease (CVD) is becoming a leading cause of morbidity, mortality and disability in developing countries due to demographic transition and changing lifestyles (Murray *et al*, 1997; Reddy and Yusuff, 1998). Approximately one-third of all global deaths and 10% of total DALY losses were attributed to CVD, and the developing countries accounted for 43% of all deaths and 73.6% of CVD-related DALY loss (WHO, 2002).

Studies of the basic cardiovascular sciences and epidemiological observational studies have elucidated factors related to arteriosclerosis

processes and effective practices to reduce the morbidity and mortality of cardiovascular diseases (Wilson *et al*, 1998; Grundy *et al*, 1999). The conventional risk factors for CVD, including hypertension, diabetes, high blood lipids and physical inactivity leading to heart disease and stroke, remain increasingly common in developing countries. These CVD events are mostly preventable when appropriate measures are taken among individuals with high risk and the general population (WHO, 2002). Both community participation and the healthcare system are key components in disease control and prevention. At the primary healthcare level, risk factor modification requires individual lifestyle changes supported by knowledgeable and skillful health personnel, including non-physician primary healthcare providers, nurses, physicians, and other health professionals. Knowledge of the existing capacity could be used to carefully plan

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for community-based and healthcare service programs. Thus, to address the CVD problem at the primary care level, it is imperative to gain an insight into the people's perception of CVD and its risk factors, as well as capacity of the existing primary health service system. However, there has been limited available evidence of such information, for developing countries in particular.

A recent national survey of the risk factors for CVD (InterAsia Collaborative Group, 2003) among Thai adults (≥ 35 years of age) showed the prevalence as follows: hypertension 21%, obesity (BMI > 30 kg/m²) 7.6%, diabetes 9.6%, hypercholesterolemia (cholesterol > 240 mg/dl) 18%, and smoking 25%. The prevalence rates tended to increase from the previous national health survey (Thai Health Research Institute, 1998). The present study was conducted in Suphan Buri Province, one of the study areas in the InterASIA study, in which the prevalence of CVD risk factors were slightly higher than the national level. We reported findings from a qualitative study that explored knowledge and perceptions about CVD and its risk factors among community members and healthcare providers in the province, during the period August 2002 to February 2003.

MATERIALS AND METHODS

Suphan Buri Province is located in the central region of Thailand. Sam Chuk, a district in the province previously included in the InterASIA study, comprises 68 villages in seven subdistricts with a total population of 58,000. More than three quarters of the population live in rural areas. Over 90 % of the community members were rice farmers with their own land and cultivated one to three harvests per year. They were within the middle-income economic strata. Most people > 35 years of age had a primary education, while most of the younger group had a lower secondary education, or higher. There were primary and secondary schools located in the communities. On average, a community was located 30 km from the provincial capital. Each subdistrict consisted of ten villages, a school, and one to two health centers. There was a community hos-

pital at the district level.

Participants in the study included community members, CVD patients, healthcare workers, nurses, physicians, and senior health officers. The participating community members and patients were recruited in the villages. The CVD patients included those with diabetes, hypertension, coronary heart diseases, and stroke. Healthcare workers were recruited from all healthcare centers in Sam Chuk district. Nurses and physicians were recruited from a community hospital in Sam Chuk, and two general hospitals in nearby districts.

In-depth interviews and focus group discussion (FGD) were conducted separately with the community members and healthcare workers. A total of four focus-group discussions were conducted, including one group of community leaders (10 participants), two groups of community members (10 participants each) and another group of healthcare workers (13 participants). For the in-depth interviews, the interviewees included 18 CVD patients. Key informants among the healthcare professionals interviewed included four senior health officials at provincial and central levels, six physicians (two from a community hospital and four from two general hospitals) and six nurses (two from a community hospital and four from two general hospitals). Information from the in-depth interviews and focus group discussions included knowledge and perceptions of CVD and risk factors, perception of the capacity of healthcare services at primary care level, and CVD prevention and control.

A semi-structured interview guide was developed, based on a protocol prepared by the Scientific Secretariat of Initiative for Cardiovascular Health, with some modification to make it more suitable for the local Thai context. The interview guide was tested and reviewed by a panel of experts in CVD research. Audiotape recorders were used to record conversations with the consent of the informants, and field notes were also made during the interviews.

All of the interviews and focus group discussion audiotapes were transcribed. The transcripts were repeatedly read and compared with the field notes. A systematic review of transcripts

was arranged, and emerging topics were developed after studying the transcripts. In order to make the data retrievable, a structured analysis plan was developed. The data were then sorted and analyzed for each topic according to the analysis plan.

RESULTS

The findings of the study report three major issues – perception of CVD as a health problem; views on existing healthcare infrastructure; and knowledge of risk factors and scope for prevention. The perspectives of the community, healthcare providers and senior health officers on each of these issues are presented, as follows.

Perception of CVD as a health problem

Community members perceived that CVD was a serious and common illness that resulted in disability or death. They were generally confused about the terms "heart disease" and "heart attack". They perceived a number of non-specific symptoms as a form of heart disease. For ischemic heart disease, they perceived that shortness of breath, palpitation or dizziness as symptoms of heart disease and perceived that weakness, fainting and sudden death as symptoms of heart attack. For stroke, they perceived that hypertension, severe headache, and unconsciousness were signs of stroke. However, they hardly acknowledged other subtle alarming signs and symptoms of stroke.

All healthcare providers shared the same view, that CVD was a very common disease. They recognized that many patients in the community had hypertension, diabetes, stroke and heart diseases. They were also concerned about the increasing number of disabled cases from the complications of stroke, and that many of these cases in the community might be unable to seek adequate care.

Senior health officers realized the extent of the increasing incidence of CVD; however, they acknowledged the problem of an incomplete data system for indicating the magnitude of the CVD burden at all levels. They suggested establishing a central organization to take full re-

sponsibility for a CVD surveillance system. They expressed the view that awareness of CVD risk might be confined to well-educated people or those with middle to high incomes, but not the lower income group.

Infrastructure and healthcare service capacity

Community members usually sought modern medicine when they suspected heart disease. However, only people with middle to high income groups could go to the hospital of their choice, while those with low incomes usually purchased medicine at a drugstore, based on their symptoms, or went to a health center. They perceived that primary health centers and community hospitals lacked both suitable equipment and well-trained medical/paramedical staff to diagnose and treat heart-disease patients adequately. One FGD respondent (a community member) said, "The only equipment the doctor has in the hospital to diagnose heart disease is a stethoscope".

Healthcare providers at health centers felt that they had limited knowledge and skills to diagnose accurately and provide primary emergency care, including cardiopulmonary resuscitation, to CVD patients. Those who had been working at primary health centers for more than ten years felt that their knowledge of CVD management was not up to date.

The healthcare providers perceived that the existing annual refresher courses were ineffective. The courses were not hands-on training, for example, only a few participants had opportunities to practice manual cardiac resuscitation techniques during the session.

"... only a few of us have the chance to practice. The remaining participants are only observers. When practicing with the model, some mistakes could occur with no serious consequences. But when you do it with patients, it is different. You cannot afford to make any mistakes" (a female health center staff member).

The health center staff mentioned that essential drugs were not adequately available at the health centers. One of them said: "...In the past we had reserpine. But now it has been cancelled. Right now we have only diuretics and

propranolol. If the patients need any other drugs, they have to have a doctor's prescription..." (a male health center staff member).

Nurses in community hospital perceived that the basic hospital infrastructure—medical supplies and equipment—and staff (doctors, nurses) were adequate. However, they perceived that the hospital could provide better services if it had a cardiologist and more medical equipment.

The physicians indicated that the drugs used for treating CVD, *eg* aspirin, diuretic, and beta-blocker, were available in all hospitals, but another medicines, such as lipid-lowering drugs, were not available in some community hospitals. Most physicians agreed that their hospitals had adequate medical facilities for managing CVD at their level of care, though one physician felt that more facilities were needed.

The senior health officers perceived that primary, secondary, and tertiary healthcare settings already had appropriate and adequate medical facilities for their respective levels of care. The important limitations were an inadequate number of health personnel, in terms of the availability of multi-disciplinary specialist teams to deal with CVD. They were also concerned about the lack of well-organized feedback mechanisms to evaluate the quality of CVD management and care at different healthcare levels.

Referral system

Access to hospital was a problem for people who did not possess a vehicle. In an emergency, they had to hire a vehicle at a barely affordable price.

The healthcare providers at the health centers reported that when they came across cases that exceeded their ability they would refer them to a hospital; however, they received unpleasant feedback from the hospital.

".....it happened quite often that doctors ruled out the disease and asked why the cases had to be referred to them"(a female health center staff member).

At the community hospital, both physicians and nurses reported a problem with the feedback mechanism in the referral system. There

was inadequate feedback information about the referred patients from the referral general hospital. The community hospital providers recognized that the feedback information would facilitate continuity of care for the discharged patients. They also reported a common problem of bed shortages for severe cases in referral hospitals.

At the same time, the physicians perceived that at present, newly graduated physicians had barely adequate experience to manage CVD in a low-resource setting. The medical schools should update their curricula to encourage such practical management.

" I myself had little experience when I was newly graduated from medical school. I found a patient with symptoms and signs related to heart disease but I had no idea of how to start. It took me years to gain enough experience and develop some insight into this problem. We really need direct experience early on" (a male physician).

Knowledge on CVD risk factors and prevention

The community members knew that diabetes, high blood pressure, obesity, and smoking were risk factors for heart disease and stroke. Some also recognized that psychological stress was related to heart disease. They acknowledged that heart disease was preventable and physical exercise was considered good for the heart, while fatty and sweet foods were not. They knew the potential benefits of fruits and vegetables. However, they admitted that a lot of people who knew the risk factors still had unhealthy lifestyles.

Nurses and health center staff perceived that the prevention of CVD should begin early in life and with a person's full participation. They recognized their role and function in the sphere of prevention rather than treatment of CVD.

Nurses, who provided care to CVD patients, strongly expressed the need for additional training in the use of modern equipment and health education, to prevent and control CVD.

" Our training focused on resuscitation, especially when patients come for emergency care. I do not have any training in health education or how to prevent the disease" (a nurse in an in-depth interview).

" I think that it is the role of nurses, to provide health education by advising patients to take care of themselves, since we work closely with patients and are often closer to the patients than even the doctors" (a nurse in an in-depth interview).

The physicians felt that they had too many patients to care for on a daily basis; hence they had too little time to educate patients. They also felt that people usually did not follow their instructions.

Government role in CVD control

All the informants agreed that the government should launch an intensive health awareness program for CVD, with community participation. The program should involve all stakeholders, including government agencies and non-government organizations in both health and non-health sectors.

The senior health officers said that the government should put more emphasis on prevention strategies for the risk factors of CVD rather than on providing treatment to CVD patients, although both should run parallel. At the primary healthcare level, prevention should be more emphasized than treatment. For secondary and tertiary healthcare levels, curative services should be the main focus, though preventive services, such as counseling, should not be neglected. The senior health officers also felt that whatever prevention strategies were pursued, they must be inexpensive and sustainable. To promote community participation in CVD prevention and control, senior health officers felt that, first, community leaders should be educated and trained about CVD-related health risks, and then the leaders should work on communicating the ideas and attitudes to community members.

DISCUSSION

All participants in this study realized that CVD and their risk factors are increasing in Thai society. Their views are confirmed by public health statistics (Bureau of Health Policy and Planning, 1997) and epidemiological surveys (National Epidemiology Board of Thailand, 1996; InterASIA Collaborative Group, 2003), which show that CVD is widely perceived as a major

health problem. This consistency between hard evidence and stakeholders' perceptions provides good grounds for a future movement to advocate CVD policy as a national priority. It also suggests that senior health officers are relatively well informed with the currently available knowledge of the burden and risk factors from epidemiological surveys.

The finding that the community members knew very little about the warning signs of heart attack and stroke is of concern, and health education should be undertaken. They also tended to have overly high expectations of very specialized care for CVD at the primary care level. At the same time, the community members appeared to know about the risk factors of CVD to a certain extent; however, they admitted that they rarely put the knowledge into practice. This might indicate that the public health sector has not done enough to promote healthy lifestyles and modify behavioral risk. It also indicates that there remains a gap in translating knowledge into policy and actions.

The primary healthcare providers in this study felt that they had limited knowledge and skills to diagnose CVD accurately and to provide standard quality emergency care for patients. The limitations encountered at the primary care level correlate with the notion raised by international agencies, that most public health and primary healthcare systems are ill-equipped and under-funded (The Advisory Board, 2001). There is a need to reassess the capacity of healthcare services at health centers to provide standard quality primary care. Further steps, therefore, require more specific information, such as training and logistics. For instance, what is the appropriate mix of medical supplies and equipment and human resources for cost-effective screening and early treatment programs at the primary healthcare level.

The nurses who provided ongoing, direct care to CVD patients expressed a strong need for additional training in using modern equipment, as well as in providing health education to prevent CVD, although the former may raise concerns about evidence-based resource allocation in the country's healthcare funding. More specific evidence of the adequacy of existing

resources may be needed to support their idea; however, their need for more training in health education seems relevant and deserves further action. With regard to physicians' complaints about their workloads and limited time to educate patients, the intervention for behavioral risk factors requires a broad range of expertise, such as behavioral counseling on exercise, diet, and tobacco use. Physicians may not possess all of the skills for educating patients. Ideally, a multidisciplinary health personnel team, including a physician, nurse, educator, dietician and exercise specialist, providing comprehensive healthcare services is desirable; however, such a team is not likely to be available in the near future, particularly in a limited-resource setting. Thus, there is a need to develop a cost-effective health educational program with training courses and guidelines for existing primary care providers to handle such a program.

The senior health officers' views, on the sufficiency of existing medical facilities for their respective levels, and the lack of manpower to properly implement the program, were pragmatic. Their views on community-based programs for CVD prevention and control seemed reasonable; however, it was necessary to do more to put the ideas into practice.

It should be noted here that the so-called senior health officers in this study were in the health sector. Circumstantial evidence from a study assessing the implementation of the recent national health development plan revealed a failure of senior health officers to link health policy to the relevant policies of other sectors (Bureau of Health Policy and Planning, 1997). Without the involvement of other sectors in key areas, such as city and transport planning, it would be extremely difficult to overcome traffic jams, with consequent sedentary lifestyles, air pollution and stress, which have been shown to influence cardiac health.

It is clear that intervention programs to prevent and control CVD are urgently needed. However, before planning communication or health interventions, people's basic perceptions and frames of reference for interpreting risk must be well understood. It cannot be assumed that the

general public thinks in the same terms and categories that are routinely used by public health professionals. This is a common mistake in designing intervention strategies. Interventions to prevent risk factors must be planned within the context of the local community. Consequently, such programs must emphasize community participation in the truest sense of the term.

The success story of tobacco control in Thailand reminds us of the crucial role of NGO's in mobilizing social movement in support of landmark policy formulation, and in shaping the social norm toward a smoke-free society (Vateesatokit *et al*, 2000). With this kind of contribution, the need to bridge the gap of intersectoral collaboration in disease prevention and control has been partially, but significantly, fulfilled. To enhance NGOs' contributions, innovative policy instruments must be invented, such as financing mechanisms, amendment of certain rules and regulations precluding participation of NGOs in formal policy forums, such as annual budget debates in parliament.

In conclusion, The present study identified problems in knowledge and limitations of the existing CVD prevention and control program among community members and healthcare providers. Publicity of the CVD burden, and preventive measures focusing on awareness and healthy behavior, should be encouraged. Capacity building to strengthening CVD prevention and control at community, primary healthcare level must be implemented. Local-level CVD prevention and control strategies should be developed through community participation.

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