Evaluation of the Healthy Village Program in Kapit District, Sarawak, Malaysia

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SUMMARY

Sarawak, Malaysia has a large population of ethnic minorities who live in longhouses in remote rural areas where poverty, non-communicable diseases, accidents and injuries, environmental hazards and communicable diseases all contribute to a lower quality of life than is possible to achieve in these regions. To address these issues and improve the quality of life for longhouse people, the Kapit Divisional Health Office implemented the World Health Organization's Healthy Village programme in 2000. An evaluation was undertaken in 2003 to determine physical and behavioural changes resulting from the programme. The main changes evaluated were those involving smoking habits, exercise habits, health screening, fire safety, environmental improvements and food preparation and hygiene. A qualitative evaluation was conducted using participant observation and key-informant interviews, focus groups and observation. Results indicate that the programme is inspiring changes in various behavioural and physical characteristics of the study population. It is clear that the Healthy Village programme is a widely accepted way of improving health outcomes in longhouses, and that it is succeeding in making beneficial health changes.

Key words: healthy village; evaluation; Sarawak; longhouse; rural

INTRODUCTION

Sarawak is one of the two east Malaysian states on the island of Borneo and is bordered by Kalimantan (Indonesian Borneo) on the south and Brunei and Sabah on the East. The Healthy Village programme is an extension of the World Health Organization's (WHO's) Healthy Cities project (WHO, 1999) that was initiated in Sarawak beginning in 1994. The concept of the Healthy Cities programme is that cities are important settings in which to address health issues in a comprehensive way by coordination and cooperation among various agencies and organizations, and that attempts to improve and change health outcomes must focus on social, environmental and economic changes as well as the health sector (WHO, 2001a). Healthy Cities programmes started in industrialized countries but have spread to developing nations and have been applied to rural settings in the form of ‘Healthy Village’ projects (WHO, 2001a).

In March and April 2003 an evaluation of the Healthy Village programme was undertaken in 12 longhouses in Kapit district in rural Sarawak, Malaysia to document the physical and behavioural changes that have occurred since the programme's introduction. The programme in Sarawak commenced in 2000 and had not previously undergone an external evaluation. The Healthy Village programme aims to broaden the scope of traditional rural health activities from a concentrated focus on water supply and sanitation to a more comprehensive focus on a
variety of health determinants and domains (Bogh et al., 2002).

Healthy Village programmes are currently underway in many other countries including Nepal, Egypt, Oman and Sri Lanka (Khosh-Chashm, 1995; WHO, 2001b). The ‘Healthy Settings’ approach has also been initiated in Island states such as Samoa, Fiji and Tonga in the form of Healthy Island programmes which have been successful in implementing anti-tobacco policies and integrating approaches to changing health outcomes in their communities (WHO, 2001c).

Kapit is the seventh and largest division in Sarawak and has a total population of 90 000. It comprises three districts, namely, Kapit, Song and Belaga, which all consist—in large part—of ethnic groups, which are a majority among the people of Sarawak, and where most live in longhouses. Villages of Iban and Kenyah people were observed in this study. There are approximately 600 longhouses in Kapit division, and currently 60 have participated in the Healthy Village programme, exceeding the initial goal of 50 for the first 2 years.

The Healthy Village programme in Kapit focuses on health education and health promotion initiatives, based on the Ottawa Charter (Lee et al., 2002; WHO, Health and Welfare Canada, and Canadian Public Health Association, 1986), to empower longhouse populations to take control of their own health and the factors contributing to it (Lee et al., 2002). The immediate goal of the programme is to bring together a small number of longhouses to collaborate in the development of culturally appropriate healthy lifestyle practices and to be role models for other longhouses wishing to change (Lee et al., 2000). Participating villages must follow the programme guidelines in terms of visible efforts made to change various aspects of village life and habits.

The major processes of the programme are to create healthy public policies and supportive environments for change, encourage intersectoral collaboration among longhouse people and leaders, local health officials and local government agencies; encourage community participation in all aspects of the programme, and to re-orient health services to include more health screening within villages.

The key interventions of the Kapit programme consist of knowledge provision and behaviour changes in the areas of non-communicable diseases, accidents and injuries, environmental hygiene and communicable diseases. These domains were chosen because the majority of current village health and safety problems fall into those categories. Water, sanitation and iodine deficiency had been successfully addressed in previous longhouse village programmes (Foo et al., 1996; Foo et al., 1998; Singh and Cox-Singh, 2001).

STUDY METHODS

Evaluation of the Kapit Healthy Village programme was carried out through participant-observation and key informant interviews with health department personnel and selected village people, focus groups and observation.

Key-informant and participant observation interviews

Interviews were conducted with village headmen, women’s groups and individual villagers; chosen by their ability to speak English and/or their availability on the day of interview, medical officers from the Divisional Health Office; chosen because they accompanied each village visit, and medical personnel from area health clinics; chosen by officers from the Divisional Health Office. An interview guide was prepared to serve as a checklist to ensure that relevant topics were covered and that information was gathered from all interviewees using the same interviewing material. Wording and sequence of questions were adapted to the situation and person being interviewed but the focus remained the same for all interviewees (Quinn Patton, 1988). Interviews were conversational in nature and questions centred on villagers’ and medical officer’s viewpoints on village health, environmental and social conditions, and their interpretations of the changes that have occurred in the community since the initiation of the Healthy Village programme. Approximately 20 people were interviewed in each village and interviews casually continued throughout the entire visit at each longhouse.

Focus groups

Focus groups were chosen by the villages and were conducted with groups of village authorities including the headmen and health promotion officers, officers from the Divisional Health Office, and some former headmen. The groups
were conducted using an interview guide as in the key-informant and participant-observation interviews. Focus groups consisted of approximately eight people each and one focus group was conducted in each village.

Observation
Observation of the entire study environment was taking place at all times. Also, the external physical condition of non-participant villages was frequently observed as they were often seen during the study period. Aspects of village life and of the programme that may not have been brought up through interviews and focus groups were observed and photographed. Conclusions drawn from observations confirmed information garnered from interviews and focus groups. The details given about the condition of the villages before and after programme implementation were consistent among interviewees, and conditions were observed in programme and non-programme villages to be consistent with that information.

Study site and approach
Kapit district was chosen for observation because over 50% of the participating programme longhouses are located there. The evaluation was of 12 longhouses of which 10 were programme participants and two were not. Cross-sectional analysis of both categories of longhouses at various stages of the programme allowed for comparisons to be made between them. Retrospective gathering of information on reported changes was possible because of documentation of the sequential execution of programme modules, programme reports and in some cases photographic evidence of longhouse conditions and health related practices before programme implementation.

RESULTS
Of the 12 villages observed, 10 were in some stage of the Healthy Village project, and five of those had completed visible changes in all programme focus areas. Two of the 10 programme longhouses had completed all but the fire safety measures, one longhouse had completed all but healthy food preparation and fire safety measures, and the last two longhouses were just beginning the programme, and one had completed only the smoking and healthy food preparation changes, while the other had only completed the smoking changes. The two longhouses observed that were not participating in the programme had not properly addressed any of the programme changes.

Non-communicable diseases
Smoking
Traditionally, longhouse cultures have had a pro-smoking policy, and before the introduction of the Healthy Village programme, smoking was rife in all villages. Smoking inside the longhouses is now not allowed, all smokers are required to go outdoors to specially designated open air ‘smoking huts’, and villages are required to display ‘no smoking’ signs inside the longhouses to remind people of the village’s healthy public policies on smoking. A fining system was imposed where anyone caught smoking inside is fined and the funds are funnelled back into the longhouse community. The village people—especially the women and children—enforce the policies themselves to promote community participation in the programme.

All 10 of the participating longhouses had successfully banned smoking inside their longhouses, imposed the fining system and posted the appropriate signage inside their longhouse. The two non-programme villages had actually started banning smoking inside their longhouses, which showed that they had been influenced by the programme, but had not built smoking huts or posted ‘no smoking’ signs in their houses. The ‘no smoking’ policy has led many village people to quit smoking entirely and records are being kept of the numbers of quitters in each village.

Exercise habits and health screening
Longhouse populations commonly have high incidence of hypertension, high blood pressure and diabetes. [Information obtained from personal conversations throughout the study period with Dr Andrew Kiyu, Deputy Director of Health Services (Public Health), Sarawak Health Department, April 2, 2003.] Before the introduction of the Healthy Village programme people did not participate in any formal physical exercise and had no records of or means to screen for body mass index (BMI), diabetes, breast conditions or blood pressure status. The Healthy Village programme encourages regular aerobic exercise through aerobics classes, use of well person
clinics, self-breast examination and other health screening conducted by trained village volunteers or by villagers themselves and record-keeping of all health screening results.

Eight of the 10 participating villages had implemented regular (at least 3 days a week) aerobics classes, self-breast examination training, other health screening and recording of screening results while two had not. Approximately 30 village members participate in the aerobics classes on a regular basis in each successful village, and all members regularly undergo health screening unless they are working away from the village or are otherwise unavailable. Records of BMI measurements taken since aerobics was introduced have shown that those who participate in the classes on a regular basis have lower BMI than non-participants. The two non-participating villages did not participate in exercise programmes or health screening.

Accidents and injuries

Fire safety

Before the Healthy Village programme was introduced fire and health hazards relating to poor ventilation, open fire cooking, proximity of flammable materials to flames and oil lamps, and improper arrangement of electrical wiring and sockets were commonplace in villages leading to the two to three village fires in the Division each year. [Information obtained from personal conversations throughout the study period with Dr Andrew Kiyu, Deputy Director of Health Services (Public Health), Sarawak Health Department, April 2, 2003.] To prevent fires and related injuries the Healthy Village programme requires that all participants create adequate ventilation in kitchens, only use open fires in areas separated from the longhouse structure, that flammable materials such as wooden walls and curtains are not in close proximity to stoves and oil lamps, and that electrical wiring is connected and stored properly. To further address fire safety many of the longhouse people have created their own device to ensure that flames from oil lamps are kept away from wood and other flammable materials. They place their oil lamps in metal containers, such as biscuit tins, partially filled with sand that have a large opening cut out in the front to allow light to shine through. The metal containers are efficient in keeping the flames away from the wooden walls where the lamps are often hung. Most of the villages that have this device impose a fine on each family that does not utilize it.

Five of the 10 participating villages had not yet completed at least one of the fire safety requirements including proper storage or placement of electrical wires, keeping flammable materials away from cooking areas and oil lamps and proper arrangement of open fire cooking areas. The two non-participating villages had not addressed fire safety at all, and the majority of the fire hazards identified by the Healthy Village programme were visible in those villages.

Environment

Environmental hygiene and village beautification

The Healthy Village programme has promoted major changes in environmental health and in the physical appearance of longhouses through a variety of initiatives including proper rubbish disposal; particularly from areas underneath the longhouses, the removal of debris on village grounds and the elimination of mosquito breeding areas such as banana tree leaf axels. These changes have been a leading factor in motivating people to continue the efforts of the Healthy Village programme and to take pride in their villages.

In eight of the participating villages all environmental changes had been carried out including disposal of rubbish beneath the longhouse, landscaping and removal of debris in the yard. In two villages environmental changes had not yet been fully addressed although there was evidence of landscaping effort. In the non-participating villages landscaping had not taken place, rubbish was accumulated underneath one longhouse, and in one longhouse there was debris indiscriminately dumped on the lawn.

Communicable diseases

Food preparation and hygiene

The Healthy Village programme provides education modules for all villagers, lead by area health workers, addressing safe food handling, hand washing practices, safe food storage and preservation and the importance of a balanced diet which were areas neglected in village life before the programme was introduced. Roaming animals are a common problem in many longhouses and the programme requires that participating villages remove stray animals such as dogs and
cats and contain chickens and other animals used for food, to decrease or eliminate communicable diseases and infections such as salmonella and other gastroenteritis.

Eight of the 10 programme villages carried out safe food preparation and storage and had good hygiene practices. People properly washed their hands before handling food, food was not preserved with large amounts of salt, food was thoroughly cooked, and stored food was covered to keep pests away. Two of the 10 programme longhouses had not yet addressed the issue of healthy food storage but people handling food did thoroughly wash their hands. The two non-participant longhouses showed no attention to either area. In one of the 10 participating longhouses and in non-participating longhouses roaming stray dogs were present.

DISCUSSION

Among the Kapit district longhouse populations it is clear that the Healthy Village programme is widely accepted as being a successful and welcomed way to improve the health determinants of the longhouses because while implementing major changes it maintains village culture, social structure and the housing system. The programme has also prompted the formation of various beneficial partnerships as a variety of government agencies, such as the District Council and the Agriculture Department, have become involved and are working closely with village leaders to improve village conditions.

The villages that volunteer for inclusion in the Healthy Village programme are exceptional among others in the division, which is a potential source of selection bias. These villages generally have very strong and open-minded headmen and are made up of a very enthusiastic population. However, despite bias the volunteer system is the best way to elicit village participation and dedication because the people are not forced to participate and nothing is imposed upon them. Furthermore, these villages act as role models for the division as a whole and encourage emulation.

The methods of analysis used in this study had a variety of limitations mainly because the analysis took place 2 years after the introduction of the programme and because of the absence of ongoing evaluation and a fixed evaluation framework. Because this evaluation took place after the programme’s initiation and because there was no ongoing evaluative process, crucial aspects of the programme, such as the absence of data collection systems and insufficient baseline data, had not been addressed. Also, without a fixed methodological framework it was difficult to anticipate the best approach to carry out the methods of evaluation, as there was no precedent to follow. The absence of a fixed framework could also lead subsequent evaluations to be inconsistent with one another leading to a lack of validity in the results. Baseline data on a variety of health issues was often either unavailable or incomplete making the ability to determine significant short-term changes in some but not all cases difficult, and in turn making it hard to determine significant long-term changes as well.

Despite these difficulties, there was strong and consistent evidence obtained from interviews of changed practices and improved health conditions since the implementation of the Healthy Village programme. This was reinforced by evidence of partial success from newer entrants to the programme that were at intermediate stages in implementation, and further reinforced from the baseline situation observed in non-participating villages.

The Healthy Village programme is currently being carried out in 60 villages in Kapit Division, and it is desirable that the programme extends to all longhouses in the Division. By continuing to work with villages that are open to change and that volunteer for the programme it is possible to make the Healthy Village programme a sustainable and widespread intervention in these populations.

A strong emphasis on current interventions needs to be maintained to sustain the programme but there are other interventions that also need to be addressed in order to tackle a more comprehensive set of health issues. One example is Betel quid chewing which is a problem in many villages, and is one that needs to be addressed in future stages of the programme in an effort to prevent cancer of the tongue and throat.

The creation of an evaluation framework is critical to the success and sustainability of this programme. Evaluation must be ongoing from the beginning and must include formative, process, impact and outcome stages. The stages need to be carried out in a logical sequence, as the short-term effects of the programme must be assessed before the long-term benefits can be measured. Baseline data should be collected
and recorded before future implementation of the programme in subsequent villages.

Fortunately, current participating programme villages have begun to collect useful data and have started to keep good records of proximal outcome indicators such as the number of smokers who have quit, aerobics class participants, and BMI, blood sugar and blood pressure measurements. However, more diligence needs to be practiced when recording intermediate and distal outcome indicators such as incidence of acute respiratory infections, gastroenteritis and other diarrhoeal diseases related to poor hygiene; and strokes, cancers and myocardial infarctions.

Photographs are a key method of documenting the condition of communities before and after participation in the Healthy Village programme. Although it will not document all essential information, the Health Department should increase picture taking in the Division and the district, and perhaps encourage the villages to begin using photography as a means of documenting the changes in their own villages before, during, and after programme implementation and at the time of evaluation.

The successful processes of the Healthy Village programme have led to a variety of positive outcomes in terms of physical and behavioural changes which can be directly linked to health and disease in terms of the health domains addressed, the cultivation of good health habits, and social and cultural development through better village–government relations and intra-village cooperation.

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