

Extension Note

STRATEGIES TO REDUCE HOUSEHOLD ENVIRONMENTAL RISKS IN THE HMONG AND CAMBODIAN COMMUNITIES LOCATED IN TWO URBAN MINNESOTA COUNTIES

Diane H. Corrin, Wanda W. Olson, Shirley L. Barber, Marilyn Bode, and Janice V. Clark

Abstract

This paper describes educational strategies used in a pilot program to reduce household environmental risks in the Hmong and Cambodian communities in two urban Minnesota counties. Nine bilingual peer community teachers received training and then taught small groups of families (436 participants) about the health risks, symptoms, and actions to take related to lead, radon, carbon monoxide, and molds in houses. Each teacher received teaching tools including a resource notebook, an electronic carbon monoxide detector to be loaned to participating families, and lead swabs and radon detectors for the families' use. Dual language publications on lead, radon, carbon monoxide, and molds were developed for use by the families and by community agencies. A high demand for the carbon monoxide detectors, and requests that all potential home buyers receive information about lead, radon, carbon monoxide, and molds are evidence that participants gained an awareness of the potential health risks and that the teaching reached them in a meaningful way.

*This project was funded in part from Environmental Protection Agency grant EPA/EQ995586-01-0 and the University of Minnesota Extension Service.

**Diane H. Corrin and Shirley L. Barber are extension educators, Janice V. Clark was an extension coordinator, and Wanda W. Olson is a housing technology specialist, all with the University of Minnesota Extension Service. Marilyn E. Bode is a housing specialist with the Kansas Cooperative Extension Service.

Situation

The Hmong and Cambodian communities have been identified as being at great risk from potential indoor environmental hazards because of their limited English-speaking and reading skills, and lack of knowledge about how to access information on environmental and health-related issues. In addition, because the majority live in inner city neighborhoods, their residential environments may put them at great risk of exposure to environmental hazards. About 60,000 Hmong (Sou Thao, Hmong American Partnership, St. Paul, Minnesota, personal communication, September 21, 1998) and 8,000 Cambodians (Khon Kong, United Cambodian Association of Minnesota, St. Paul, Minnesota, personal communication, September 23, 1998) live in the Minneapolis-St. Paul (Minnesota) metropolitan area of Hennepin and Ramsey counties. About 85% (87.2%) of the Hmong households in the seven-county metropolitan area live in rental housing, while 12.8% are home owners (Yang & Murphy, 1993).

Families need to learn how to protect themselves and especially their children from potential hazards in their indoor environments. Educational programs can relate to the concept of environmental justice only when such programs identify and address disproportionately high and adverse human health and environmental effects on minority and low-income populations. The need for education may be greater for some populations because of their housing conditions, their limited English-speaking and reading skills, and their lack of knowledge about how to access information on environment and health-related issues; in addition, the response of agencies may be limited because of language or cultural barriers. Existing bilingual housing counseling and bilingual home ownership education classes have focused on tenant rights and economic issues, not on household environmental risks.

Many Hmong and Cambodian families live in older housing stock and need to have their children tested for blood lead levels. Elevated blood lead levels can reduce a child's ability to learn and behave normally.

Minnesota ranks fourth among all states in the percentage of homes (45%) with potential problems related to radon (Minnesota Department of Health, 1993). The only way to know if a house has elevated levels of radon is to test. Radon is the second leading cause of lung cancer, and those who smoke are at additional risk.

Carbon monoxide poisoning is of special concern because it can lead to death. Minnesota had the 11th highest death rate from unintentional, non-fire carbon monoxide in the United States from 1979 through 1988 (Cobb & Etzel, 1991). It is not known how many incidents required the attention of health professionals. During the winter of 1995-96, the Minneapolis and St. Paul media (KARE-11, 1995; Baca, 1996) reported on two incidents in which Hmong families required an emergency response because of carbon monoxide poisoning. In one case the furnace had to be replaced, and in the other case the flue was "iced-over" and prevented the combustion gases from venting properly. Neither of the households had a carbon monoxide detector.

Molds in houses can cause infections and allergic reactions, and can contribute to asthma and other respiratory diseases. Molds grow in damp materials. Sources of mois-

ture include water leaks and household activities such as hanging clothes indoors to dry, and cooking with uncovered pots.

Program Design

The purpose of the pilot educational program on household environmental risk management in the home indoor environment was to: a) reduce risk behaviors related to lead, radon, carbon monoxide, and molds; and b) increase knowledge in accessing resources related to environmental risks. The project team consisted of an Extension educator (project leader) and an Extension coordinator from Hennepin County, an Extension educator from Ramsey County, and an Extension specialist in housing from the University of Minnesota Department of Design, Housing and Apparel. These team members had experience in household environmental risk management education and had previously worked with Southeast Asian communities. In addition, the team included the peer community teachers who became co-creators in partnership with Extension faculty in the teaching-learning process.

The challenge was to develop and deliver a culturally appropriate educational program and help build community capacity to manage environmental health problems. The model used to deliver the educational program combines the "train-the-trainer" model (Eitington, 1989) and the Expanded Food and Nutrition Education Program (EFNEP) model (Fleming & Splett, 1985). In the "train-the-trainer" model, the effect of initial training is multiplied each time the trainers teach others. In the EFNEP model, staff who teach in the community are from the same cultural or ethnic background as the targeted audiences. Learning style preferences had been identified by representatives of the Hmong and Cambodian communities during focus group sessions conducted in Minneapolis in 1993 (Bode & Corrin, 1994). Culturally specific learning style preferences incorporated into the development of the educational program were:

- teaching would occur in a familiar setting (location);
- teaching would be for the entire family unit, with all ages together;
- teaching would be conducted using both the native language and English;
- printed materials would be in both the native language and English whenever possible;
- instructors helping others learn would be honorable and trustworthy; and
- particular emphasis would be placed on the oral presentation, with use of demonstration or illustrative materials whenever possible or appropriate.

The Extension educators met with a shaman, a spiritual leader of the Hmong Clans, to discuss the role of the peer community teachers in this project and to seek assistance in recruiting the teachers. The shaman contacted 10 bilingual individuals recognized as honorable and trustworthy by the Hmong and Cambodian communities. Nine individuals, seven Hmong and two Cambodian (several of the Hmong also spoke Cambodian), received teaching tools and completed 12 hours of training on lead, radon, carbon monoxide, and molds, and on how to teach this information to others. The teaching tools included a resource notebook, lead swabs, radon detectors, and an electronic

carbon monoxide detector. All of the peer community teachers had attended college and seven of the nine were college graduates; seven were male and two were female.

Peer community teachers prepared a teaching plan before teaching small groups of people in homes or meeting areas in their own neighborhood. Print materials and a telephone number to call for more information were left with the families attending the neighborhood sessions. Each peer community teacher received a \$125 stipend after attending the 12-hour training and another \$125 stipend after completing a minimum of five neighborhood sessions. The training and the neighborhood sessions were completed during October and November of 1995.

The peer community teachers seemed able to grasp the information about lead, radon, carbon monoxide, and molds, and to understand the concepts as presented in the training; teaching others, however, was a new experience and they would sometimes call the Extension educator for advice. The peer community teachers followed culturally appropriate protocol in being introduced/presented at the neighborhood sessions. They taught all ages in the native languages and in English. The elders, who are not accustomed to a written language nor to being taught by others, needed to be taught at a respectful slow pace so they could understand and grasp the concepts presented.

The families could use the carbon monoxide detectors for a period of up to one week. The detectors had a digital readout and a 24-hour memory of the highest reading, and were used as a screening device, not as testing equipment. The peer community teachers instructed families about placement of the detector and how to record readings. In the event that a detector sounded an alarm, arrangements had been made with fuel suppliers to inspect the home for the source of the carbon monoxide, at no cost to the family. These families were concerned that a furnace would be inspected and be "red tagged" and disconnected. In the winter, furnace replacement is one of the biggest nightmares for low-income families with few immediate resources. Potential sources of emergency grants and means of accessing them were identified.

The dual language publications were developed for use by the families and community agencies. The publications on lead and radon were authored by University of Minnesota housing faculty members; the publication on carbon monoxide was co-authored by a building scientist who investigates sources of carbon monoxide in residences; and the molds publication was co-authored by an environmental health consultant specializing in biological pollutants and indoor air quality problems. These publications were developed in consultation with partners from the fields of health, safety, and housing, and the drafts were reviewed by members of the target communities for content and to identify concepts to be illustrated. Professional translators translated the English text into Hmong and Cambodian. The translations were reviewed by another translator or by a panel and, in addition, the Hmong translations were reviewed by a Hmong housing inspector.

Program Impacts

The program impacts are based on oral comments from the peer community teachers as well as written comments from the reporting sheets they completed for each

teaching session. After the sessions were completed, the peer community teachers requested that they have a supper meeting to share experiences and to make recommendations for the future.

- Community members were receptive to the educational program and took some action. Four hundred thirty six (436) participants who were either renters or owners of homes attended the small-group sessions. Two thirds of the participants were adults, and the majority of the participants were male, as would be expected in these two cultures. A high demand by the participants for the carbon monoxide detectors and the recommendations that all potential home buyers receive information about household environmental risks are evidence that the participants had gained an awareness of potential health risks, and that the teaching had been meaningful.
- Peer community teachers together with dual language materials are an effective way to educate members of these communities about environmental health and housing concerns, including carbon monoxide poisoning. The peer community teachers (male and female) are considered a resource by members of their communities, and the dual language materials are being used by Hmong media (radio and newspaper), public and environmental health professionals, and Southeast Asian servicing agencies. One peer community teacher reported receiving more than 200 calls at his home after work during the time of the extensive media coverage of deaths from carbon monoxide, January and February of 1996. It is very likely that this same peer community teacher saved the lives of some members of one of the community families, who were ill from carbon monoxide poisoning, by alerting public health officials who removed the family from the house until a new furnace could be installed.

References

- Baca, M.E. (1996). Family saved from carbon monoxide poisoning. *StarTribune*, February 6, B3.
- Bode, M., & Corrin D. (1994). Lead prevention program planning using focus groups. *Proceedings of the Ninth Annual Conference on the Sociology of Housing*, (pp.147-150). St. Paul, MN: Department of Design, Housing, and Apparel, University of Minnesota.
- Cobb, N. & Etzel R. (1991). Unintentional carbon monoxide-related deaths in the United States, 1979 through 1988. *JAMA* 266, (5), 659-663.
- Eittington, J.E. (1989). *Train the trainer - The winning track*. Houston: Gulf Publishers.
- Fleming, P.L. & Splett P.L. (1985). *EFNEP impact study, EFNEP service in Hennepin and Ramsey counties*. Program in Public Health Nutrition, University of Minnesota.
- KARE-11 Television News (December 26, 1995). Golden Valley, MN: KARE-11 Gannett Broadcasting.

Corrin, Olson, Barber, Bode and Clark

Minnesota Department of Health (1993). *Minnesota - Map of radon*. St. Paul, MN: Minnesota Department of Health.

Yang, P., & Murphy N. (1993). *Hmong in the '90s: Stepping toward the future*. St. Paul, MN: Hmong American Partnership.