

PUBLIC HEALTH INTERVENTION PROGRAM TO REDUCE THE RISK OF DIOXIN EXPOSURE THROUGH FOODS IN DA NANG HOT SPOT

Vu-Anh L¹, Tuyet-Hanh TT¹, Ngoc-Bich N², Duc-Minh N³, Thanh-Ha N¹, Kim-Ngan N²

¹ Hanoi School of Public Health, 138 Giang Vo Street, Hanoi, Vietnam; ² Vietnam Public Health Association, 138 Giang Vo Street, Hanoi, Vietnam; ³ Institute of Social and Medical Studies, My Dinh, Tu liem District, Hanoi, Vietnam

Abstract

Da Nang Airbase served as a bulk storage and supply facility for Orange Agent and other herbicides during the Operation Ranch Hand 1961-1971^{7,8}. Local people living in the vicinities of the Da Nang Airbase have probably been facing with high risk of exposing to dioxin in soil, water and mud and particularly through consuming local contaminated foods. A recent study showed that samples of soil, mud, some local foods, blood, and breast milk taken around Da Nang Airbase had dioxin concentrations exceeding current international environmental and food standards⁷. Continuing with the success of the public health intervention program implemented in Bien Hoa dioxin hot spot in the period 2007-2009 in reducing the risk of dioxin exposure for local residents^{1,2}, Vietnam Public Health Association (VPHA) has received funding support from the Ford Foundation to expand this intervention model to the four wards in the vicinities of the Da Nang Airbase. In 2009, a pre-intervention cross sectional survey on the knowledge, attitude and practices (KAP) of householders living near Da Nang Airbase on dioxin and measures to prevent dioxin exposure through consuming contaminated foods was undertaken. The results showed that although living in a severe dioxin hot spot, the knowledge and practices of the local residents on dioxin and preventive measures were very limited⁴. An intervention program to reduce the risk of dioxin exposure for local people living at these four wards was developed with active involvement of local departments and related stakeholders. The intervention program has been implemented since 2010 and is expected to complete in June 2011, including/incorporating three components: (1) Training and increasing knowledge for members of Da Nang Public Health Association, representatives of related stakeholders, and collaborators on preventing dioxin exposure through food; (2) Information, education and communication to improve knowledge and practice for local residents living in the four wards, especially for food handlers in households; (3) policy advocacy to reduce the dioxin exposure through foods for residents (Picture 1). This report will give details about the intervention activities using public health approach.

Key words : Danang Airbase, intervention program, dioxin, dioxin exposure through foods

Introduction

According to Division of Mitigation of the Consequences of the Chemicals Used During the War on Human Health (10-80 Division), there are seven severe dioxin hot spots in Vietnam including Da Nang, Bien Hoa, Phu Cat, Pleiku, Nha Trang, Can tho and Tan Son Nhat airbases, among which, Da Nang, Bien Hoa and Phu Cat airbases have been evaluated as the three most severe dioxin hot spots in Vietnam¹. Samples of soil, sediment, blood and some types of local foods near Da Nang Airbase had elevated levels of dioxin, which exceeded the existing international standards in environment and food¹. Scientific research showed that the main source of human exposure to dioxin is through consuming dioxin contaminated foods. Residents living at An Khe, Hoa Khe, Thanh Khe and Chinh Gian wards, which are close to Da Nang Airbase may have been being exposed to dioxin in local contaminated foods. Following the success of the public health intervention program implemented in Bien Hoa dioxin hot spot in the period 2007-2009 in reducing the risk of dioxin exposure for local residents^{2,3,4,5,6}, the Ford Foundation continued funding for expanding this intervention model to the four wards in the vicinities of the Da Nang Airbase. This intervention program was aimed to: 1) Improve the knowledge, attitude and practice (KAP) of local residents on preventing dioxin exposure through foods by implementing information-education-communication (IEC) activities in the community; 2) Capacity building for staff and collaborators of Danang Public Health Association for efficient implementation of the intervention program; 3) To strengthen the support and commitment of local leaders in order to develop policies, which help to reduce the risk of exposing to dioxin in contaminated foods for local residents.

Material and methods

A public health intervention program with multi- disciplinary approach and social civil mobilization has been implemented in one year, started from June 2010 to June 2011 by VPHA and Da Nang Public Health Association. The intervention has incorporated three components (see Figure 1), including: (1) Training and increasing knowledge for members of Da Nang Public Health Association, representatives of related stakeholders, and collaborators on preventing dioxin exposure through food; (2) Implement IEC activities to improve knowledge and practices of reducing

the risk of dioxin exposure for local residents living in the four wards, especially for food handlers in households; (3) policy advocacy to reduce the risk of dioxin exposure through foods for local residents.

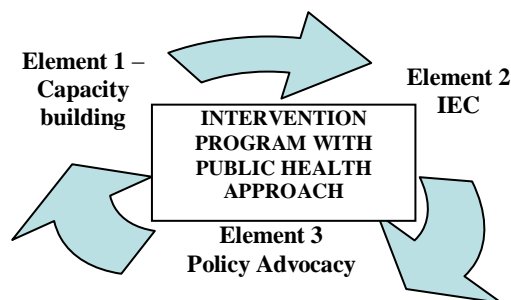


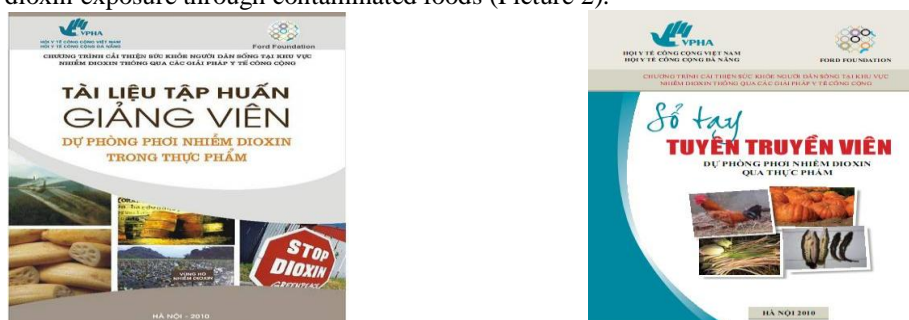
Figure 1. Public Health Intervention Model applied at dioxin hot spot - Da Nang, Vietnam

Results and discussion

Before implementing the intervention program, a pre-intervention KAP survey on dioxin and measures to reduce the risk of exposing to dioxin in contaminated foods was conducted among 400 food handlers, randomly selected from four wards near Da Nang Airbase in July 2009. The results showed that, the respondents' knowledge on dioxin and measures to prevent dioxin exposure through consuming contaminated foods was extremely limited, especially the knowledge on the presence of dioxin in locally cultivated foods. Local residents also had limited knowledge on the types of high risk foods, and dioxin exposure pathways. They did not know the potentially high risk foods such as animal fat and viscera, eggs, milk, dairy products, unfiltered water and fish and aquaculture products taken from dioxin polluted ponds near by the Airbase. Besides, there were a number of households still consumed their self-cultivated foods, especially in An Khe Ward⁴. The survey results also revealed that, conducting direct communication at community meetings, and communication at meetings of the Women's Union and other mass social organizations, distribution of pamphlets, and posters at households were local residents' favourite IEC communication channels⁴. This pre-intervention survey results were shared at a Public Consultation Workshop in Da Nang City and this was an excellent opportunity to have involvement of related stakeholders in developing detailed intervention program for the hot spot.

Component 1: Organizing training for related stakeholders, Da Nang Public Health Association's staff and collaborators

Training documents were designed, pre-tested, and produced by VPHA. The set of documents included: (1) a set of guidelines for trainers – Prevention of dioxin exposure through contaminated foods; (2) The handbook for collaborators on prevention of dioxin exposure through contaminated foods (Picture 2).



Picture 2. Training documents in Vietnamese for trainers and Handbook for collaborators designed by VPHA

Two training workshops of trainers (TOT) and collaborators were conducted in June 2010. The purpose of these workshops was to provide the participants with essential knowledge and skills in order to implement program's activities at the intervention sites. The major contents of the TOT workshop included general information about dioxin, the health effects of dioxin, the intervention plan and activities, knowledge on high risk foods, the measures to prevent dioxin exposure through contaminated foods, communication skills at the community, the mechanism and method of supervision. There were 20 participants attended the training and five outstanding participants were selected to play the role of trainers in the following training workshop.

For the collaborators' training, 40 collaborators who were working in the four communal health centers, Women Union and other mass social organizations with enthusiasm and high commitment were selected and trained. The major contents of this training were the nature of dioxin, its health effects, measures to prevent dioxin exposure through contaminated foods, direct and in-direct communication skills at the community, and problem solving skills when implementing the communication activities in real situation at community.

Component 2: Information – Education – Communication in the community

Development of communication documents

A set of communication documents was established, tested and completed based on the results of the KAP pre-intervention survey to ensure that the content and format were suitable for the targeted audiences. These documents consisted of: brochures with information about dioxin and measures to prevent dioxin exposure from food, pictures briefly describing and illustrating what should and what should not be done to prevent dioxin exposure from food for foodhandlers to stick at their kitchens, A0-size posters for collaborators to use in public places (such as markets, shops) at communal health centers, and community meeting halls (Picture 3). Short reportages (approximately 10 to 15 minutes each) were produced and broadcasted on radio and loudspeakers.



Figure 3. Some communication documents in Vietnamese used in the intervention program

IEC activities in the community

Direct communication activities were conducted by staffs of communal health centers, members of the Women's Union and collaborators to provide information and consult foodhandlers who choose and prepare food for their families. Collaborators came to every households and introduced methods to prevent dioxin exposure through food based on the knowledge they had learned and answered questions of foodhandlers and distributed leaflets, stick pictures at kitchens' walls. All activities of the collaborators were weekly reported in meetings with the project's local coordinator, so that they were given timely support and solutions to problems that arose during the activities' implementation and their work progress were updated to the coordinators. Indirect communication was frequently and continuously conducted on local radio and loudspeakers within six months. Besides, VPHA's technical staff collaborated with the VTV2 (Vietnamese national television channel) to produce a documentary film on the intervention program. Moreover, journalists and reporters from television stations were invited to join intervention activities in order to get information, write papers and produce news and reportage about the intervention program.



Figure 4. Some communication and supervision activities conducted in Danang

By the end of the December 2010, 11,090 households have been propangadated and consulted and more than 11 thousands leaflets and pictures have been distributed. Nineteen reportages on local radio and loudspeakers were broadcasted, 45 community meetings were organized to communicate on this issue, 50 A0-size posters have been stick at the community meeting halls, at communal health stations and at various markets. Supervision results showed that

over 90% of foodhandlers had good knowledge on preventing dioxin exposure through foods for themselves and their families.

Component 3: Policy advocacy

Advocacy activities were conducted in order to call for promulgation of regulations on the prohibition of culturing and consuming high risk foods in the intervention areas. A policy brief with recommendations on urgent issues related to exposure prevention for the residents in Da Nang in general and for those living in the implementation wards in particular was developed. Advocacy activities also included encouraging local authorities to develop and implement regulations against the actions of catching and selling fish and other aquaculture products taken from lakes and ponds near Da Nang Airbase. Besides producing the policy brief, articles and reports on local and national newspapers and radio were also collected to support the policy advocacy campaign.

Conclusion

The intervention program based on a public health approach has showed some positive results in minimizing the risk of dioxin exposure for people living near Da Nang Airbase. Supervision results have showed that after nearly one year of intervention, the majority of local residents was aware of health risks associated with dioxin exposure, understood and applied recommended methods to prevent dioxin exposure through food. In addition direct and indirect communication activities, the regulations against culturing and selling high risk foods at the dioxin polluted areas in Da Nang City must be developed, passed and strictly implemented as soon as possible because the actions of catching fish, prawns and crabs were still observed in dioxin contaminated lakes near Da Nang Airbase. Assessment on the effectiveness and sustainability of this intervention program should be undertaken to provide evidence for further expansion of the model to other hot spots.

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