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IMPROVING WORKING CONDITIONS IN A SMALL FOOD FACTORY, CHACHEONGSAO PROVINCE, THAILAND

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ABSTRACT

Thai factory workers suffer from an occupational injury approximately 3% (214,235 out of 7,720,747) each year. Improving working conditions is, therefore, a priority for the Thai government to avoid the aforementioned injury. As industrial situations are similar in other South-East Asian countries, workplace safety will be improved by applying the same methods. We tested the effectiveness of the International Labor Organization's Work Improvement for Small Enterprise (WISE) method in a noodle factory in Chacheongsao province, eastern part of Thailand. As this was participatory action research, the researchers, the factory owner, and all twenty workers participated in data collection, problem identification, implementation, and evaluation. The research was done between January and July 2006. The research group identified problems that should be improved in seven of WISE's eight dimensions, especially unsafe material storage and handling and poor workstation design. In doing this study, we were able to address the workers' lack of knowledge about ways to improve their working conditions and increase their awareness about the causes and results of an unsafe working environment. After improvements were implemented, we made monthly site visits for ten months to assess sustainability and noted that working conditions remained improved in several dimensions, especially in the removal of unused materials from the factory and improved work-station design. This study confirmed previous work and showed that the WISE method could improve working conditions effectively in small factories. Moreover, we have learned how to approach the factory owner and workers to sustain improvement of working conditions.

Keywords: WISE, work improvement, participation, working condition.

INTRODUCTION

Unsafe working conditions in small factories in Thailand cause significant health risks and occupational diseases. During the last decade, the Social Security Office of Thailand paid more than one billion baht each year (about $US 30 million) to treat occupational injuries and accidents. The International Labor Organization developed the Work Improvement for Small Enterprise (WISE)

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technique and has advocated its use in small factories, particularly in developing countries in the 1988s. Takeyama (2006) showed that the WISE technique was effective in nine small enterprises in the Philippines. In 1996, the National Institute for the Improvement of Working Conditions and Environment (NICE) in Thailand launched a project for small enterprises that had a high number of occupational injuries. More recently, WISE was applied in six metal pressing factories in Thailand (Krungkraiwong, 2006), resulting in higher productivity and significantly fewer accidents over three years of follow-up. Convinced by these results, the Department of Labor Protection and Welfare at the Ministry of Labor supports the use of this technique to improve working conditions of small enterprises.

A noodle factory was selected for a case study because it had a high frequency of occupational accidents, for example, cutting oneself on bamboo baskets, falling on slippery floors, stumbling and falling over the unused materials, and injuring oneself due to poor workplace design, etc. Therefore, it was a good place to test the efficacy of applied WISE. Lessons learned there as how to improve WISE methodology could be applied elsewhere in small and medium food factories both in Thailand and other Southeast Asian countries.

The objectives of this study were to test the effectiveness of applying WISE technique to a small enterprise, and to apply the method for participatory approaches for improving workplace safety and workers' practice.

MATERIALS AND METHODS

Study site

The target group for this intervention was a small and medium enterprise in Thailand. A pilot study had revealed that working conditions at a particular Thai noodle factory were in need of improvement because they posed a safety risk for workers, and so this factory was selected for the study. The factory had two buildings with a combined area of 500 m^2. The first building was used for making Thai noodles from fresh rice by machine; the second building was used for making Thai noodles from fermented rice by hand and for packaging products. Willingness to participate in the study on the part of factory owner and workers was also considered, as well as the owner's positive attitude with regard to improving working conditions. Since working conditions at the noodle factory were similar to those at other small and medium enterprises, lessons learned from studying this factory could be applied to other workplaces.

Principles of WISE program training

To analyze and address safety risks, an intervention based WISE was applied. The principles of WISE program training were included: encouraging participatory activities, giving practical advice, finding low cost solutions, finding productivity-enhancing solutions, focusing on achievement and avoiding of criticism, and using examples of local practices found in the other sections of the factory and the neighboring factories.

WISE dimensions

The dimensions of WISE used in this study were included: material storage and handling, workstation design, machine safety, lighting, control of hazardous substances, work premises, work organization, and work related welfare facilities.

Participants

Participants included the owner, twenty workers (the total number of workers), three researchers, two research assistants, and local resource persons, including two public health personnel and two government officials. The researcher, factory owner, and twenty workers participated in all phases of the study. The activity started by collecting data about health risks in relation to the existing working conditions. The second step was problem identification and how to improve working conditions. The third step started after guidelines for improved working conditions that were developed by the working group in

second step had been completed; participants subsequently used it for implementation of the guidelines. The last step was the evaluation of action taken. Steps of the activities are shown in Figure 1.

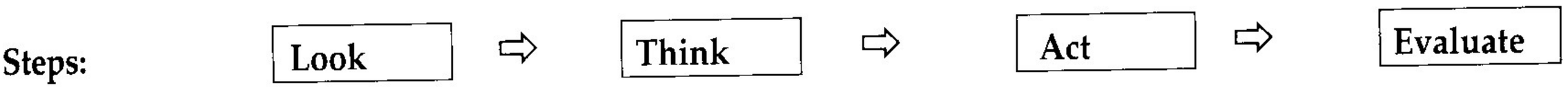

Figure 1. Schematic diagram showing various steps in the action research process.

In this study, the participation of all participants was very important. The applications of action research concept with participatory activities were separated into four steps: Look, Think, Act, and Evaluate. Activities are summarized in Table 1.

Table 1. Application of action research concept with participatory activities.

Dimensions	Participatory activities*
1. Look	a) Walk-through survey, using WISE checklist: rapid workplace assessments were carried out by applying relevance safety and health action checklists and by interviewing workers and the factory owner.
2. Think	a) Researcher returned data to the factory owner and workers for situation analysis. All participants participating in analyzing the data and alternative choices were improved. b) Creating realistic expectations: discussion of project goals and realistic expectations for the outcome. c) Field trips: visiting a good local factory (a small noodle factory that had a better working condition in central Thailand) in term of safety and healthy workplace. d) Design action plan and process for improving working conditions: action plan for reducing high risk working conditions was set by all participants based on the alternative choices; the timeline for the various phases was done.
3. Act	a) Implementation of the simple improvement of working conditions: the participants joined to improve working conditions of the factory according to the action plan. b) Check of the implemented plan: after starting the activity for the improvement, accomplishment of the activity was checked and readjusted by the factory owner and workers supported by specialists.
4. Evaluate	a) Evaluation of the activities: sharing the outcome and confirming benefits of activities were done every month after starting. b) Reassuring of the future appropriate activities: participants and advisory group met to discuss lessons learned and what activities should be employed in the future.

*The working group included the researchers, the owner, the workers, and the health personnel.

RESULTS

The three major categories of the identified problems that were analyzed are consisting of results of problem identification, working conditions improvement, and applying participatory approach.

There were two major findings in the category of problem identification, i.e., working conditions and workers' competencies. It was found that all of eight dimensions of WISE methodology were poor conditions for work in the category of working conditions. The major problems of small food factory were considered as dirty and dangerous in working conditions, i.e., there were many unused equipments and materials in working area, the slippery floor, and dirty workplace area.

Workers' competencies. The three major problems found were lack of knowledge, bad attitudes in healthy workplace, and high risk working behaviors. Several major problems of workers in small factory were health risk behavior that were identified, i.e., risk from unawareness in accident by boiled water, injuries by working equipments, and low back pain due to lifting posture.

The category of working conditions improvement. As a part of the activities, the example of improvement in materials storage and handling was done by removal unused materials and moving the same equipments into the same place as shown in Figure 2. Moreover, the example of improvement of work-station design was done by improving desk for transferring the products as shown in Figure 3.

Before **After**

Figure 2. Pictures demonstrated the example for the improvement of materials storage and handling.

Before **After**

Figure 3. Pictures demonstrated the example for the improvement of workstation design.

Results of the participatory observation showed that worker's practice in high risk behaviors was better. All of workers were very satisfied with more comfortable and healthier workplace.

The category of applying participatory approach. This study confirmed three reasons for the successful of participatory approaches in the small enterprise as the previous study by Kogi (2006). Those three identified reasons were realistic goals setting in achieving similar good practices, self-help stepwise action aiming at low-cost solutions; and consistent encouragement by trained facilitators. However, we believed that it should add two more key reasons, i.e., informal approach and application of available technique solutions in a flexible manner; and creating positive attitudes of the factory owner and the workers.

DISCUSSION

The results of this study also prove that WISE methodology can improve working conditions effectively. It was confirmed that successful of WISE methodology deal with the fundamental concept of WISE program training, especially focusing on achievement, using learning by doing, encouraging exchange of experience and promoting workers' involvement. The early visible outcomes were the decrease of unsafe working condition, and high risk working behaviors, and the increase of worker's satisfaction..

The key concepts of successfully participatory approaches as mentioned before may be generalized to other small enterprises with similar situations, especially small food factories in Thailand and Southeast Asian countries.

One possible way to sustain good working conditions in small enterprises is to consistently follow-up and maintains the cooperative relationship among researchers, factory owners, and workers, as we did this through monthly site visits over the period of ten months.

During this study, we developed the manual guidelines *"How to improve working conditions of small food enterprises"*, and our next step is to support the use of it with other small enterprises in Thailand.

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REFERENCES

Kogi, K. 2006. Advances in Participatory Occupational Health Aimed at Good Practices in Small Enterprises and the Informal Sector. *Industrial Health* 44: 31-34.

Krungkraiwong, S. 2006. Promotion of Healthy Work life at Small Enterprise in Thailand by Participatory *Method. Industrial Health* 44: 108-111.

Takeyama, H. 2006. A case study of Improvements implemented by WISE Projects in Philippines. *Industrial Health* 44, 53-57.