AWARENESS OF PERSONAL PROTECTIVE EQUIPMENT USE AMONG WORKERS IN TRANSFORMATIVE BAMBOO HOME-BASED INDUSTRY IN LAMPANG, THAILAND

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ABSTRACT

Transformative bamboo home-based work contains a process of transforming raw bamboo into various types of products such as meatball and ice cream skewers, chopsticks, and tooth pieces. Each unstandardized process may lead the workers to expose to work-related health risk factors. Awareness of using personal protective equipment (PPE) may help the workers concern about health risk factors in the workplace. This qualitative study aimed at exploring the worker’s awareness to use PPE. 15 samples, five males, and ten females were interviewed within 45 minutes using semi-structured questions. The data analysis was performed by transcribed data with type verbatim. Looking for a relationship and a connection between the data and then categorizing and creating a conclusion.

The findings showed the five (5) concepts related to the awareness of PPE use as followed; 1) experience, the workers’ past work experiences or the time when those workers witnessed the illnesses and injuries at work led them to become more conscious of PPE use while working; 2) the perception of negative effects on their health, such as being afraid of getting sick or having work-related injuries, had brought the awareness; 3) provision of the safety equipment, provided by the entrepreneurs, helped to reduce the workers’ expense of purchasing safety equipment on their own for work; 4) comfortability, when the workers wore additional layers of the outfit and used other equipment for safety (gloves and mask), some of them reported the discomfort of using PPE. However, they would be somewhat aware of the adverse effects on their health. They ended up using safety equipment although the PPE made a discomfort feeling; and 5) work environment, the workers had concerned that home-based workplace was not a standard workplace. The environment had exposed the workers to the factors contributing to health problems. This had brought about the awareness of the use of safety equipment in the workplace.

The suggestions would be entrepreneurs shall raise the awareness of safety equipment use at work by providing sufficient and standard equipment for the workers and making the work environment safe and up to standard. Moreover, health care professions should inform knowledge on the negative impact of working on health and also use the workers’ experience to raise their awareness of safety equipment usage.

Keywords: Awareness, Personal Protective Equipment, Transformative Bamboo Home-based Industry

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Introduction

In Thailand, National Statistical Office (NSO) reported that 38.3 million persons, about 58.8% of the Thai population, were employed the worker. Of those worker groups, approximately 17.0 million or 44.4% were formal employment, while about 21.4 million or 55.9% were informal employment. The distribution of informal jobs by level of educational attainment illustrated that the majority (approximately 13.4 million or 62.5%) had a low level of education, primary school education or lower. Due to the nature of informal works, they do not work in a safety or standard workplace, no protective equipment provided, have no social security and confront factors such as low product quality, time pressures, rising debt, unstable income, delayed payment from employers, poor posture, long working hours, and contact with chemical substances may contribute to work-related health problem. In 2016, about 3.3 million of informally employed persons had ever get hurt or accident from work. The three major health problems of informally employed persons were: 1) got hurt or accident from being sharp cut or wound (63.4%), 2) exposure to toxic chemical substance (62.3%), and 3) musculoskeletal disorders because of working conditions such as poor posture, long working hours (39.4.8%) (National Statistical Office [NSO], 2015)

Transformative bamboo home-based work, one kind of informal employment, contains a process of transforming raw bamboo into various types of products such as meatball and ice cream skewers, chopsticks, and tooth pieces. The production process is half-half of machinery and manual operation. Raw bamboo is machinery transverse cut into blocks which the length is as a needed product. Next, bamboo blocks are fed into sharpener machine to shape the product varies according to what size or diameter the customer desires. The machine can churn out hundreds of piece in a minute. The last step, the finished product will be dried, and after that, the worker organizes the numerous and mess pieces of finished product into a bundle and send to the customer. In such a process, informal worker may expose to hazard factors at work as reported in previous studies, for example, the workers in small and medium sizes of furniture-making industry were more likely to have a hearing loss, muscle strain because of loud noise, poor posture and repetitive work (Sukdee, Janprasit, & Songkam, 2010; Shoubi, Barough, & Rasouljivaheri, 2013); unsafe working environment such as installed machine without safety led to accident and organ injuries in many kind of informal work (Saha, Nag, and Nag, 2006; Yodwong, 2012; Chaichanan, Janprasit and kaewthummanukul, 2014). There is also the evidence in the descriptive study of members of the local handicraft center in Chiang Mai province, participants reported that long working hours, not enough light, no personal protective equipment, and lack of safety were associated with health problems such as back pain, eye problems, respiratory problems, gastric disease, and noninfectious diseases (Pecktong, 2009). Moreover, the study of characteristics and factors related to occupational injuries in farmers in Sankamphaeng district, Chiangmai, Thailand showed that 27.6% of the participants reported not or occasionally use of personal protective equipment correlated to higher incidence of injuries (Chino and Jiamjarasrangsri, 2015).

Purpose

This qualitative study aimed at exploring the awareness to use personal protective equipment among workers in transformative bamboo home-based Industry in Lampang, Thailand. Health Belief Model (HBM) was used as a conceptual framework to guide the interviewed questions. Health Belief Model focuses on the attitudes and beliefs of individuals...
and predicting of health behaviors or actions. The model comprises of 4 constructs: perceived susceptibility, perceived susceptibility motivates people to behave something to decrease the risk; perceived severity, the person believes about the severity of disease which is based on information or knowledge. Person may think that the disease would create an adverse effect on health; perceived benefits, people’s opinion on usefulness of changing behavior will decrease their chances of developing disease; and perceived barriers, it is an individual’s evaluation the obstacles in the way of him/her adopting new behavior (Stretcher & Rosentock, 1997).

Methods

Design, sample, and setting

This study is qualitative design. A purposively selected sample of 15 workers who worked in the transformative bamboo home-based industry in Muang district, Lampang province. All participants were asked for consent, and all of them volunteered to participate in the study. After completing the interview, each participant received 100 Baht (approximately $3).

Data collection and analysis procedures

The study was approved by the Institutional Review Board from the Boromarajonani College of Nursing, Nakhon Lampang. Data collection was conducted between June and July 2015. In-depth interview was held with 15 participants. Each participant had 45- to 60-minute using semi-structured questions guided by health belief model framework. All names in the result section were changed to protect participant confidentiality. The questions focused on how the workers would be aware of using personal protective equipment while working. The step of the interview was as follows:

1. The researcher met with the selected participants individually by appointment, explained the purpose of the study and asked for taped record permission.
2. Informed consent was obtained
3. The researcher started with a general conversation to make a relationship and participants would feel comfortable.
4. Administering the interview and taped record with the questions like the example followed:
   4.1 Could you please tell me about your past work experience and how do you end up with work here?
   4.2 Could you please tell me what kind of your responsible task do you perform?
   4.3 Do you think your workplace is safe? If not, how do you do to avoid accident/injury/health problem?
   4.4 While working, do you usually wear the protective equipment?
   4.5 Why do you always wear the protective equipment? If usually use. Or why don’t you wear the protective equipment all the time while working? If not or
occasionally use.

4.6 How do you get your protective equipment?

4.7 Do you think it is standard equipment?

4.8 What are you aware of your work and health problem the most?

4.9 Do you think you have some benefits to wear the protective equipment while working? Explain how?

4.10 What are the barriers or obstacles that you cannot wear the protective equipment all the time while working?

5. Transcribed data with type verbatim performed data analysis. Looking for a relationship and a connection between the data and then categorizing and creating a conclusion.

Results

Characteristics of 15 participants, five males, and ten females, were aged between 36 – 57 years. The average of work experience in this home-based industry was 3.26 years, range from 6 months to 7 years. 80% of participants were educated at the primary school level. All of them were daily payment and had no social security.

It was found that there was a relationship between awareness and personal protective equipment use. The data were linked and concluded. Five (5) themes were identified as follows;

1. Past work experience.

This theme, participants were more capable of talking openly about their past work experiences. Some of them had work in a big and standard company as formal employment with social security. Moreover, some witnessed the illnesses and injuries at work before. Therefore, their past experiences led them to become more conscious of personal protective equipment use while working.

“I used to work in Cement Company, and there was a lot of dust in the air when the mountain was a bomb, and the company had a strict policy to use protective equipment all the time on site so that when I retired and worked here, it is my habit…” said Kam.

“Last year, I had been admitted to the hospital for several days because I got cut by the sharp bamboo skin. I thought it was just a small wound I only cleaned the wound by alcohol and back to work as usual. Two days later, I had a high fever, the wound got inflamed, turned to red skin, swelling and had pus. Since then I had used gloves whenever I work…” said Dang

2. The perception of adverse effects on worker’s health.

This theme described perceived of the adverse effect of work-related risk factors on worker’s health such as being afraid of getting sick or having work-related injuries. The perception of the harmful situation at work had brought the awareness.

Dang who was got injured and had been admitted for several days stated more about the consequence of the sick leave from work.
“…I got paid daily, and I got a payment when I came to work so that when I got admitted to the hospital, I lost my wages for three days. However, I still was lucky that I used health insurance card for a medical fee. Since then, I was aware of protecting myself from all kinds of injury; I wore gloves all the time while working…”

On the other hand, Kaew, the youngest worker, who occasionally used mask and gloves while working stated that

“I had never got accident from work because I did concentrate on my work. Moreover, putting on the gloves made my work slowed down because it was bulky…”

3. Provision of the safety equipment

Protective equipment, provided by the entrepreneurs, was requested because it helped the workers save money.

“It was good that the entrepreneur was so kind and concerned. She always bought mask and gloves for the workers. This led workers always used the protective equipment such as mask and gloves. However, disposable mask and rubber gloves were not long lasting. Some workers adapted protective equipment themselves. As mine, when I worked with sharpener machine, I used sticky tape wrapped around fingers and covered by wearing cloth gloves one more layer…” said Dee.

“I wanted the entrepreneur to prepare standard protective equipment for us. Standard equipment was very expensive. We, daily payment workers, could not afford. I knew that the equipment adapted to ourselves was not good enough and not standard equipment, but it was better than do nothing…” said Bonmee

4. Comfort/discomfort feeling

When the workers wore additional layers of the outfit and used additional equipment for safety (gloves and mask), some of them reported a discomfort feeling of protective equipment use. However, they would be somewhat aware of the adverse effects on their health. They ended up using safety equipment although the protective equipment made a discomfort feeling.

“Suffocated… it was inconvenient to wear gloves or put the mask on while working. I was not able to breathe when I put the mask on…” said Kammee

“I knew that the cutting machine was very noisy. Sometimes, I felt a loud noise made tinnitus. I didn’t like to wear ear plug. It was discomfort…” said Wasana

“I organized pieces of finished products and packed it ready to send to customers. I always sat on the floor for a long time. I felt back pain and muscle strain, but I had to tolerate because of the more I packed, the more income. The back support could help. Even though it was inconvenient, it helped to support my back, and the pain did not get worse…” said Ma


The workers had concerned that home-based workplace was not a standard workplace. The environment had exposed the workers to the factors contributing to health problems.
had brought about the awareness of the use of the protective equipment.

“As you seen, the workplace was not well organized and the air filled with dust. I used to it, but I also had to protect myself. I always use protective equipment all the time, and after work, I went back home, I took a bath immediately…” said Jandee

Discussion

Awareness of protective equipment used among informal, transformative bamboo home-based workers showed the result as expected from previous studies. The results can be discussed, based on Health Belief Model (HBM), as follows: First, The workers in this study used protective equipment all the time while working because they believed that they were susceptible to hazard environment at the workplace. Some had experienced injuries or illness from work. On the other hand, some workers thought that they were not at risk because they had never suffered accidents or illness. Not or occasionally use of protective equipment tend to result. As explained by HBM, the higher the perceived risk, the higher the likelihood of changing behaviors to reduce the risk (Hayden, 2014).

The finding was similar to the study by Chino and Jiamjarasrangsri (2015) whose study result showed a significant relationship between samples which did not or occasionally use of personal protective equipment and work safety perception and a higher incidence of injuries. Yodwong (2012) found that 138 workers who worked in the garage, Phayao province reported the high level of perceived the exposure to hazard environments, such as loud noise, chemical substance and light sparks from welding, associated with the high level of use protective equipment.

Second, in terms of perceived severity, the worker who had been hospitalized after got hurt from being sharp cut by bamboo skin, she changed her behavior to use sticky tape wrapped around fingers and put on gloves all the time while working because she experienced the consequently adverse effect of the severity of the illness, not only her health problem but it also her income loss. Perception of seriousness or severity of the disease would influence person’s belief and make a change of behaviors.

Last, Perception of benefits and barriers can be discussed as discomfort feeling. Most of the workers indicated about the inconvenience or suffocating using mask and gloves. Wearing gloves or put the mask on was the obstacle to work or slow down their work performances. As a result, these workers gave up to use the protective equipment and consequently had a health problem. However, it was a group of workers perceived more on the health outcome benefits and could overcome the barriers. A habit of using protective equipment was adopted.

Strengths and limitations

A significant strength is that the study findings contribute new knowledge to understand the factors that make informal workers aware of using protective equipment based on Health Believe Model. Moreover, the result also has implications for future intervention development and the support that use of protective equipment has on informal worker’s health. However, the limitation should be noted. Data was collected based on appointment time fixed with the individual, and most of the workers were interviewed during work time. The interviewees might lose concentrate on the questions. Furthermore, the specific sample limits generalizability to all informal workers in Thailand. More studies with samples in diverse settings and with different kinds of informal work are needed.
Conclusions

The researcher conducted in-depth interviews with transformative bamboo home-based workers to determine their awareness of protective equipment use and provided a better understanding of the workers’ perception of risk factors in the workplace that led them to concern more of using protective equipment. Community health nurses can use the findings from this study to inform knowledge and strengthen the awareness of risk factors in the workplace so that the workers will change behaviors to use protective equipment every time on work. Also, entrepreneurs shall raise the awareness of safety equipment use at work by providing sufficient and standard equipment for the workers and making the work environment safe and up to standard.

References


