



Original Article

Awareness of labor insurance coverage for occupational injuries and diseases among employees at small and large enterprises

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ARTICLE INFO

Article history:

Received 2 January 2013
 Received in revised form
 15 January 2013
 Accepted 8 March 2013

Keywords:

Awareness
 Occupational diseases
 Occupational injuries
 Small enterprises

ABSTRACT

Objectives: To assess the awareness of compensation claims for occupational injuries and diseases among workers and the general public, and analyze the difference between workers at small and large enterprises.

Materials and Methods: A cross-sectional survey was conducted among workers at small enterprises, large enterprises, and the general public in Eastern Taiwan between 2006 and 2007. Participants were enrolled from people who attended occupational health promotion programs held by the Eastern Center for Occupational Hazard Prevention and Treatment. A questionnaire was used to assess awareness of medical care benefits, injury and sickness benefits, and disability benefits for occupational injuries and disease. An awareness index was used to investigate the difference between workers at small and large enterprises.

Results: 251 individuals were enrolled, including 79 workers from small enterprises (mean age 46.9 ± 8.9 years), 50 workers from large enterprises (49.4 ± 10.4 years) and 122 from the general public (45.7 ± 13.0 years). The awareness of medical care benefits, injury and sickness benefits, and disability benefits was poor, with only 10.5%, 13.0%, and 9.1% of people well aware of these benefits, respectively. Awareness was poorer among workers from small enterprises than large enterprises ($p < 0.05$). After adjusting for the educational level of the workers, the scale of enterprise remained a significant independent predictor of the awareness score ($p = 0.04$).

Conclusion: Awareness of labor insurance benefits was poor among workers, especially those at small enterprises, and the general public. Regular education programs should be provided to promote awareness of labor insurance benefits for occupational injuries and disease.

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1. Introduction

Research into occupational health and industrial safety in small enterprises is a new and rapidly developing field [1]. Small enterprises are defined as companies hiring less than 50 employees, and they employ the majority of workers in many countries. In Taiwan, 78% of workers work for small enterprises [2]. Workers at small enterprises include self-employed, temporary, agricultural, fishing, and informal sector workers. Owing to limited resources, small enterprises usually do not provide occupational health services for workers. A national survey in Taiwan showed that only 13.7% of

small enterprise workers received regular health examinations, whereas 81.3% of large enterprise workers do [3]. According to the Taiwan Labor Safety and Health Act, employers may serve as labor safety and health staff in small enterprises. However, employers usually have very limited training in the prevention and management of occupational health risks. Therefore, regulations on labor safety and health affairs are rarely followed in small enterprises. Small enterprises usually provide very few education programs on occupational health and industrial safety for their workers [4,5].

Workers in small enterprises have higher risks of occupational injuries [6,7]. The ergonomic, physical, and chemical working environments are more hazardous in small enterprises than in large ones [8]. Studies also show that workers in small enterprises have higher risks of serious occupational injuries [6,9–11]. After reviewing data from North Carolina's statewide medical examiner system, Loomis and colleagues found that self-employed workers had higher risks of fatal occupational injuries than other workers

Conflict of interest: none.

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[12]. In addition, workers in small enterprises have more limited access to claim labor insurance benefits for occupational injuries than those in larger enterprises. Obstacles to claiming compensation from labor insurance include injured workers' lack of familiarity with regulations, unwillingness of employers to provide assistance to workers for claims, and workers not having labor insurance through their companies [13].

Taiwan established labor insurance in 1950 to provide aid to workers with occupational injuries. It is a compulsory social insurance program that provides medical care benefits, injury and sickness benefits, disability benefits, and death benefits for workers [14]. Labor insurance is the most important protective system for workers with occupational injuries or diseases in Taiwan. However, many workers who are entitled to compensation do not submit a claim. Poor awareness of the claim regulations of labor insurance may be the main obstacle.

The objective of this study was to assess the awareness of compensation claims for occupational injuries and diseases among workers and the general public, barriers to claiming compensation, and the difference in awareness between workers at small and large enterprises.

2. Materials and methods

2.1. Study design and participants

A cross-sectional survey was conducted in small enterprises, large enterprises, and among the general public in Hualien, Taiwan. Participants were workers and the general public who participated in occupational health promotion programs held by the Eastern Center for Occupational Hazard Prevention and Treatment from 2006 to 2007. Small enterprise workers were construction and electrical workers in small enterprises with less than four employees, or were self-employed, and joined the program voluntarily. Large enterprise workers were employees of a government-owned power company in Hualien. Participants from the general public were people who participated in a health promotion activity. Questionnaires were administered by face-to-face interviews.

2.2. Assessment of awareness of compensation claims for occupational injuries and diseases

The questionnaire used the clauses of the Labor Insurance Act to assess the awareness of compensation claims for occupational injuries and diseases in terms of medical care benefits, injury and sickness benefits, and disability benefits [15]. The question for awareness of medical care benefits was "Do you know when an insured worker has an occupational injury or disease, he can claim compensation at an outpatient clinic or emergency service, or at hospital admission?" The question for awareness of injury and sickness benefits was "Do you know when an insured worker has an occupational injury or disease, he can claim compensation for salary loss during the medical treatment period?" The question for awareness of disability benefits was "Do you know when an insured worker has an occupational injury or disease and becomes disabled, the disability compensation is 1.5 times that of a non-occupational illness?". In Taiwan, traffic accidents which occur between a residence and a workplace are regarded as an occupational injury, but most people are unaware of this. We assessed the awareness of this rule with the question "Do you know that an accident which occurs between a residence and a workplace is regarded as an occupational injury?" The degree of awareness was rated by a three point Likert-type scale with "don't understand (never heard of it)", "do not quite understand (heard of it, but don't know any details)", and "understand well (know the details)". The study also asked for any

history of occupational diseases or injuries, participants experience in claiming labor insurance benefits, and obstacles to file the claim when they had occupational injuries or diseases.

2.3. Comparison of awareness between workers at small and large enterprises

The awareness index was created by summing up the scores of awareness of: (1) medical care benefits; (2) injury and sickness benefits; (3) disability benefits; and (4) the question about traffic accidents between a residence and workplace. We compared the awareness index between workers at small and large enterprises.

2.4. Statistical analysis

Data were expressed as mean \pm SD and a two-tailed *p* value <0.05 was considered statistically significant. The Mann–Whitney *U* test [16] was used to compare the ranked ordered awareness index between workers at small enterprises and large companies. To evaluate the influence of educational level on awareness, the Likert-type ordinal awareness index scale was adjusted by an ordinal probit regression (GENMOD procedure with /LINK=CPROBIT in SAS). Statistical calculations were performed using SAS 9.2 software (SAS Institute Inc., Cary, NC, USA).

2.5. Ethical approval

This study was approved by the Institutional Review Board of the Buddhist Tzu Chi General Hospital (IRB096-15).

3. Results

3.1. Sample characteristics

A total of 251 participants were enrolled in this study, which included workers from small enterprises (mean age \pm SD; 46.9 ± 8.9 years), workers from large enterprises (49.4 ± 10.4 years), and the general public (45.7 ± 13.0 years). The distribution of ages showed workers at large enterprises were older than the other participants (Table 1).

3.2. Awareness of compensation claims for occupational injuries or disease

A small proportion of participants were somewhat aware of medical care benefits, injury and sickness benefits, and disability benefits for occupational injuries and disease (10.5%, 13.0%, and 9.1% respectively). Only 19.6% of participants knew that a traffic

Table 1
Characteristics of participants.

	Small enterprises	Large enterprises	General public
Number	79	50	122
Age (y):			
<35	8	8	22
35–50	42	12	56
51–60	25	27	32
>60	4	3	11
Sex (M/F)	53/28	36/14	25/97
Education (%)			
≤ 12 years	44.9	4.1	35.7
Senior high	34.6	30.6	38.3
College or above	20.5	65.3	26.1
Race (%)			
Non-aborigines	88.9	92.0	72.1
Aborigines	6.2	4.0	16.4

accident between a residence and workplace is regarded as an occupational injury.

3.3. Experience in claiming compensation for occupational injuries and problems concerning not applying for benefits

Only 9 of the 29 participants (31%) who had experienced occupational injuries or diseases had filed claims for medical care benefits from Labor Insurance. The major reason (64.3%) for not filing a claim was lack of familiarity with the regulations related to compensation claims.

3.4. Comparison of awareness between workers in small and large enterprises

The awareness index score for workers at small enterprises was significantly lower ($p < 0.05$) than that for large enterprises (Fig. 1). Workers in large enterprises had a higher educational level than workers in small enterprises ($\chi^2 = 33.3$, $df = 2$, $p < 0.05$). After adjusting for the educational level by multivariate regression, the scale of enterprise was still a significant independent predictor of the awareness score ($p = 0.04$).

4. Discussion

4.1. Main findings

To the best of our knowledge, this is the first study comparing awareness of labor insurance coverage for occupational injuries and diseases among employees at small and large enterprises. The results showed that workers at small enterprises were less aware of claims for occupational injuries or diseases than those at large enterprises. Labor insurance, which is designed to protect workers when they have occupational accidents, has not been implemented well.

4.2. Limitations

This cross-sectional study was based on an occupational health promotion program for workers and the general public in Hualien,

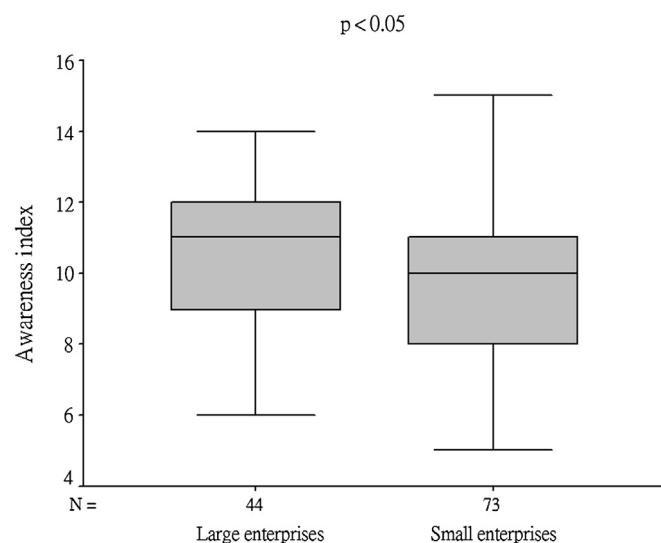


Fig. 1. Awareness index scores for workers at large and small enterprises. The line in the shaded box represents the median score. The upper edge of the shaded box represents the 25th percentile of the score, and the lower edge is the 75th percentile. Bars indicate the range of the remaining data. There are no outliers. Workers in small enterprises have significantly lower awareness index scores. N = number.

and dissemination of information is poor in eastern Taiwan. The poor awareness of workers in small enterprises might be overestimated if we generalize the results beyond the study population. Awareness of labor insurance coverage for occupational injuries and diseases may not imply that workers will use it. The complicated compensation system in Taiwan might also be an important reason for the poor utilization.

4.3. Dilemma of workers in small enterprises

In Taiwan, craft workers, self-employed workers, and temporary workers at small enterprises are insured through labor unions, but the staff members of labor unions have not been trained well and are unable to provide members proper resources for occupational health. Workers at small enterprises are under-served, and occupational health programs in Taiwan usually target large companies. The needs of small enterprises are ignored. Workers at small enterprises are more vulnerable in the workplace [8] and subject to severe occupational accidents more often than those at large companies [17]. Small enterprises usually do not provide adequate training programs due to the size of the business [18,19]. Workers at small enterprises do not receive regular training in industrial safety and occupational health because there are no specialists in this field in their company [5]. In addition, small enterprises have more limited ability to prevent hazardous exposure than large enterprises [20]. In this study, we found that occupational diseases were under-reported, especially in small enterprises, because no organizational personnel were able to assist workers in claiming labor insurance benefits and give correct information.

4.4. Implications for occupational health and industrial safety

In the past, occupational safety and health legislation has exempted small enterprises and self-employed workers. Recently, the Taiwan government amended the Labor Safety and Health Act which requires employers to hire physicians to provide in-plant occupational health services. Even where the legislation has wider coverage, it is not applicable to enterprises with less than 300 employees. In 2002, the Council of Labor Affairs utilized Occupational Hazard Prevention Special Funds to establish nine occupational hazard treatment and prevention centers in northern, central, southern and eastern Taiwan. These centers provide occupationally injured workers ready access to claims for labor insurance benefits. Starting from 2008, each center was required to provide basic occupational health services to small enterprises, including surveillance of the working environment, training employers about occupational hazards, assessment of health risks, surveillance of workers' health, and periodic health examinations. To help workers in small enterprises, it is important to have direct dialogue with workers, learn their problems, and establish trust. Training programs on occupational health and industrial safety legislation can facilitate healthier and safer working environments [21]. The Eastern Center is located in Hualien where 99.3% of workers are employees of small enterprises [22]. Our results suggest these workers need to increase their awareness of labor insurance coverage for occupational injuries or diseases to facilitate utilization of occupational health services. After being informed of benefit payments for occupational diseases, workers were alerted to possible occupational illnesses at their workplaces and actively invited occupational physicians to check their work environments. Co-operation with labor unions is an effective way to communicate the concept of occupational health and safety [23]. In this study, we asked participants about the most useful ways to improve industrial safety and help workers with occupational accidents. Eighty-eight percent of participants agreed that more promotion in

factories or labor unions is the most effective method, followed by using the media to advertise. Having personal contact with trust could be the best way to promote safety programs in small enterprises. Using field surveys, physicians can determine actual work conditions and obtain feedback from workers on how to prevent potential hazards in their workplaces.

In conclusion, poor awareness of labor insurance benefits among workers at small enterprises may hamper their claims for benefits when they have occupational injuries or diseases. Direct encounter with workers, field surveys, and active promotion may be effective ways to promote occupational health and industrial safety in small enterprises. Nevertheless, promotion programs are also necessary for workers at large enterprises.

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