ปัญหาสังคมและสาธารณสุขของคนงานก่อสร้าง : การศึกษาเปรียบเทียบระหว่างขอนแก่นและหนองคาย

SOCIAL AND HEALTH PROBLEMS AMONG CONSTRUCTION WORKERS: A COMPARISON BETWEEN TWO NORTHEASTERN PROVINCES-KHON KAEN AND NONGKHAI

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บทคัดย่อ

การก่อสร้าง เป็นอุตสาหกรรมที่มีความเสี่ยงสูง มีอัตราตายสูงกว่าการตายจากอุตสาหกรรมอื่น ๆ อย่างไรก็ตาม การศึกษาเกี่ยวกับปัญหาสังคมและสาธารณสุขของคนงานก่อสร้างมีจำนวนน้อย เฉพาะอย่างยิ่งในประเทศกำลังพัฒนา และยังไม่มีการศึกษาดังกล่าวในภาคตะวันออกเฉียงเหนือของไทย การศึกษานี้เก็บข้อมูลโดยใช้แบบสอบถามจากการสัมภาษณ์คนงานก่อสร้างทั้งหมด 812 คน จำแนกเป็นคนงานก่อสร้างจากจังหวัดขอนแก่น 407 คน และจากจังหวัดหนองคาย 405 คน พบว่า ความเป็นอยู่โดยทั่วไปของคนงานก่อสร้างมีสภาพไม่ดี และไม่มีความแตกต่างกันระหว่างสองจังหวัด ผลการศึกษาบ่งชี้ว่า สภาพการทำงานและความเป็นอยู่ของคนงานก่อสร้างควรได้รับการพัฒนาอย่างยิ่ง ควรส่งเสริมการใช้เครื่องป้องกันอันตรายส่วนบุคคลให้มากขึ้น และควรจัดให้มีสวัสดิการแก่คนงานก่อสร้างและครอบครัว

Abstract

Construction is a high-risk industry with higher mortality rates than to other industries. However, there have been few studies describing the social and health problems of the workers, especially in developing countries. None have been done in Northeastern Thailand. This study examined issues related to social and health of construction workers at the construction sites in Northeastern Thailand. Data were collected by questionnaires, through observation and interviewing. A total of 812 construction workers, 407 from Khon Kaen and 405 from Nongkhai, were studied. Living conditions among the construction workers were generally poor. Social and health problems were not significantly different between the two provinces. The data suggest an urgent need to improve working and living conditions, including promoting use of personal protective devices and improving welfare for the workers and their families.

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INTRODUCTION

Construction is a high-risk industry with higher mortality rates than to other industries. Data from the Ministry of Interior of Thailand reveal that, in 1991, in the construction industry the death rate from injuries was 14 times and the disability rate was 3.4 times the average for workers in manufacturing industries. In Thailand, the number of construction workers is believed to be increasing more than 10% per year and it was estimated that there were about one million construction workers in 1989 (Phandhuratana and Thongpasook, 1989). Thus rates of injuries and other health problems in Thailand are expected to be growing. Information about the social and health problems of construction workers could lead to the formulation of appropriate measures to prevent or reduce them. However, there have been few studies describing the nature of construction work and the living and working conditions of the workers, especially in developing countries. None have been done in Northeastern Thailand.

There are two types of construction workers- local residents and migrant workers. Local workers stay in their own houses while working on the construction site. Migrant workers from other areas usually stay in a camp provided by the employer in or close to the construction site or find a place where they can stay together often in a slum in a big city.

There have been no published studies conducted in the northeastern region of Thailand on the conditions of construction workers. The situation could be different from a city, such as Bangkok where there is an inadequate local work force. The differences could also be existed among the provinces within the region.

This paper aims to describe the nature of construction work and the living and working conditions of construction workers. Comparison between the two study provinces was also provided.

METHODS

A cross-sectional study was conducted between July 18 and 21, and August 24 and 25, 1994 in Khon Kaen and Nongkhai in the Northeastern Thailand. Khon Kaen was selected as the big city with rapid economic growth while Nongkhai was as a smaller city. Two stage sampling was employed. A list of all construction sites was obtained by driving along all roads within the municipal area using an up-to-date map. The location of each site was marked on the map. All sites in the stages of basement preparation, installation of pile foundation, foundation construction, wood and concrete work were eligible. The largest sites, based on their usable area after completion, were selected from each province. From the remaining (smaller) sites, 12 from each province were selected using systematic random sampling. A list of all workers on the site on the day of the survey was used to obtain a random selection of 20 workers at each selected site.

Information was gathered using trained interviewers and data collection forms developed from a pilot study. Data were obtained by interviewing the workers.

For comparing between the two study provinces, it was necessary to consider the effect of size of the sites, large and small. This was because there were heterogeneity between large and small sites. Thus Loglinear Model was performed to examine the effect of provinces, adjusted for the effect of sites, on each study characteristic.

RESULTS

From the total of 233 construction sites (164 sites in Khon Kaen and 69 sites in Nongkhai). A total of 44 sites were selected for the study. From each of these sites, 20 workers were randomly selected, except that at those with 20 workers or fewer, all were selected. Thus a total of 812 workers, 405 from Khon Kaen and 407 from Nongkhai, were studied.

Baseline characteristics of the study workers

Both provinces had more male than female workers. There was no significant difference in the sex distribution between the two provinces (p−value = 0.72). More than 85% of the workers were 40 years old or younger. Those at Khon Kaen were somewhat older than in Nongkhai (p−value < 0.01). Almost all workers were Buddhists. Most of the workers were married and living together and more than ninety percent had primary school education. The majority of the workers were born in the northeastern region. Although they were mostly local workers, defined as those who worked in their own provinces, there were more local workers in Nongkhai than Khon Kaen (p−value < 0.01).

General living conditions

Most of the workers in Khon Kaen and Nongkhai were staying in their original place of residence. More workers in Khon Kaen than in Nongkhai stayed in the camp sites, especially in the large sites. The main means of travelling from where they were staying to the construction sites for the workers in Khon Kaen was walking or public transport. In Nongkhai workers traveled by their own cars or motorcycles to work, especially for small sites.

The pattern of payment was the same in both provinces. A higher proportion of those in Nongkhai than in Khon Kaen had construction work as their only source of income. The monthly income from construction work was somewhat higher in Khon Kaen than in Nong Khai. More workers in Khon Kaen than in Nongkhai reported that they were in debt although similar proportion in both provinces said they could balance their accounts. The pattern of ownership of televisions and refrigerators was more or less the same in both provinces.

Characteristics of the families

The characteristics of the families of workers were similar in both provinces for large and small sites. Issues which obviously differ between the two provinces were that more workers in Khon Kaen than in Nongkhai utilized Antenatal Care (ANC) while more workers in Nongkhai than in Khon Kaen had their children living with them and cared their children themselves. Among those from the large sites, the mortality rates of their children were 2/304 (0.7%) and 10/252 (4.0%) for those in Khon Kaen and Nongkhai respectively while for those from the small sites, the mortality rate of their children were 10/345 (2.9%) and 8/275 (2.9%) for those in Khon Kaen and Nongkhai respectively.

Illnesses among the workers

During the last year, the proportion of workers who had at least one severe illnesses (so they had to stop working) was higher in Nongkhai than in Khon Kaen (Table 1). Illness due to accidents was more or less the same among the two provinces for those in the small sites but for those in the large sites, there was higher accident caused illnesses in Khon Kaen than in Nongkhai.

The proportion of male workers who reported that their friends had sex with prostitutes was higher in Khon Kaen than in Nongkhai. However there were very few workers, less than 5% for either province, who said they had sex with prostitutes themselves.

Characteristics of employment and working pattern

The majority of the workers were temporary, paid according to the number of days they worked (Table 2). There were more workers of this type in Nongkhai than Khon Kaen. The workers in Nongkhai had a wider variety of previous occupations than those in Khon Kaen and they had worked for more construction companies, including the current one.

Provision and utilization of Personal Protective Devices (PPDs.)

Almost all of the workers always wear shoes while working although this was slightly

more common in Khon Kaen than in Nongkhai (Table 3). There were more workers who wore helmets at the large sites in Khon Kaen than elsewhere and workers in Nongkhai were less likely to wear gloves than in Khon Kaen. Few workers knew about provision of PPDs by the companies.

Wages and welfare

Employment contracts (official or unofficial) were more common at the large sites in Khon Kaen than at other sites. More workers at large sites received payments for overtime, lodging, travelling expenses or car. Workers from Nongkhai were less likely than from Khon Kaen to have any holidays. Job opportunities and satisfaction were similar in both provinces although there were more workers from Khon Kaen than from Nongkhai who wanted their children to do the same work as themselves. Knowledge about Labour Law was slightly better in Khon Kaen than Nongkhai.

DISCUSSIONS

Most of the workers were the local people from the Northeast. They took up construction work as an occupation aside from farm work. They were willing to do so mainly because they could earn more income from construction work than farm work. Additionally construction work was quite dependable while farm work depends more on uncontrollable factors such as the weather. So they tolerated and accepted the poor conditions of living and lack of welfare.

Since the workers were mainly people from the region temporally employed as construction workers, most of their characteristics were similar to the general population. The workers were local residents who left their homes in the early morning and returned at the end of the day. Most of the local women and the older adults who were normally jobless during the dry season seek jobs in the city near their home. Jobs which are temporary and require no qualifications are available as unskilled construction workers, especially at small construction sites.

As most of the workers were local residents, many were from the same villages as one another; they knew each other quite well or were even related. This led to fewer social problems than found in other surveys mostly among workers in Bangkok (Kittithorsap, 1982; Otrakul, 1987; Chaisut, 1989 and Sornnampol, 1989). Their way of life as construction workers was not very different from their normal way of life. Although some of them stayed in the camp sites, more than two thirds of them lived with their husbands or wives. This also reduced the use of prostitutes which could lead to social and health problems.

Fewer workers stayed in camp sites and the camp sites were not as crowded as found in other surveys (Otrakul 1987, Chaisut 1989 and Sornnampol 1989). Problems about caring for children and their education were not major issues for these workers in contrast with those who were immigrant workers in Bangkok found by Chaisut (1989) and Sornnampol (1989).

Public transport was the usual means of travelling to work since most of the workers tended to stay at their houses in villages near the city. Public transport here refers to all kinds of vehicles for which the workers had to pay a fare. Mostly they were small trucks owned by one of the workers taking other workers from the same village to work in the city. The truck was not designed for passengers, with no roof and no seats. The workers have to stand up so that the truck can take as many as possible to lower the fare per head. This can result in mass casualities if there is a car accident.

Almost all workers were temporary, paid on a daily basis. This allows the contractors great flexibility due to the ready availability of workers, stages of construction lasting for a short time and requiring no specific skill of the workers. The workers are willing to work under these conditions since it enables them start or stop working whenever they want. This is necessary because they have to work in the

farms or the rice fields whenever the crops are ready to be harvested or the fields are ready grow crops due to the recent rain. The flexibility provided by construction work and the fact that they can work near where they live may be the main reason why more than half of the workers said they were satisfied with their current jobs. They were willing to work at construction sites even though a number of them were paid less than the minimum wages stated in the law.

The unskilled nature and the greater variety of the work as well as the lower safety levels could lead to a high prevalence of injuries. The use of PPDs did not reduce the incidence of injuries. This can be explained by that the type protective devices used. For example, shoes were mostly cut shoes or slippers which are not adequate to protect against accidents such as nail puncture or other harm to the feet. The inadequate use of the helmets was also found.

Low use of PPDs appeared to be related to the climate rather than law enforcement. The workers complained about the hot weather with temperatures which sometimes were up to 40 degree Celsius. It was too hot for them to wear boots or helmets which were not designed to protect against the heat. For example, most of the workers were willing to wear hats to protect themselves from the sun rather than helmets. Thus the appropriate design of PPDs for use in hot weather could increase occupational safety in tropical countries.

The owners are not concerned about the safety of the workers since most of the workers are temporary and the construction has relatively short duration. Therefore there appear to serious barriers to resolving problems of safety and sanitation. Revising the law followed by full enforcement could work in theory but in practice would be complicated. Other options should also be considered.

Approximately two thirds of all of injuries caused by accidents were due to the unsafe working conditions at the sites. The remainder were due lack of skill of the workers. For both of these causes, the foremen can play an important role in solving the problem. They, themselves, agreed that accidents could be prevented by paying attention to safety issues and prevention of accidents, for example, providing guard netting to protect against falling objects. The workers have to obey the foremen otherwise they will not be paid or may be dismissed. Thus if the foremen became more concerned about safety issues and working conditions, the prevalence of accidents could be decreased dramatically.

There was little provision for welfare. Only a few sites provided payments for lodging or for overtime work. There were no holidays for the workers. But most of the workers stopped working two days a month, usually the days after the pay days. The workers took the money to their families, paid debts, or spent their money on these days. This resulted in automatic closure of some sites on these days.

Most of the workers knew little about their rights under the Labour Law, but still most of them believed that the employers followed the law. It could be that they were familiar with other issues where the law had little effect on the real circumstances. It was not so much a feeling of hopelessness but rather that the conditions were unavoidable. Thus, being employed and earning money were good enough for them.

In summary, working and living conditions among the construction workers in the North-eastern Thailand were poor. Empowering the workers and educating them to know their rights, full enforcement of the law, and promoting obligations of the employers not to take such advantages of the workers would alleviate the problems.

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REFERENCES

Bank of Thailand and National Council of Economic and Social Development. 1993. **Mid Year Report**, July 1993.

Chaisut, N. 1989. **Problems, needs, and the possibility of establishing a labor force federation.** Bangkok: Seankarnpim.

Division of Techniques and Planning, Department of Welfare and Labor Protection, Ministry of Interior. 1991. **Work-related injury in 1990.** Bangkok: Kromkarntaharnpansook.

Kittithornsap, K. 1982. Factors affecting fertility in female construction workers in Bangkok. A thesis for a Master in Management, Institute of Development.

Otrakul, A; Joseph, M. and Srisornchat, S. 1987. Urbanization and mental health of construction workers. **Bulletin of the Department of Medical Services**. 12: 679-685.

Phandhuratana, W. and Thongpasook, P. 1989. Construction labor force: a poor group of the urban population. **Socio-economic Journal.** 46-56.

Sornampon, B. 1989. Opinions of the centers' staff, parents and construction sites' staff concerning the non formal education services provided in the the construction children centers. (Unpublished).

Table 1. Illnesses among the workers

Characteristics	Large sites		Small sites		p-value
	KK (n=200)	NK (n=200)	KK (n=205)	NK (n=207)	
1. Had severe illness during the last 1 year					<0.01
- Only once	12.5	16.0	18.4	23 9	
- More than once	5.0	7.5	6.8	8.8	
- Never	82.5	76.5	74.9	67.3	
Total number who had been ill	**35**	**47**	**52**	**67**	
2. Cause of the illness	(n=35)	(n=47)	(n=52)	(n=67)	0.62
- Accident	14.3	8.5	15.4	16.4	
- Others	85.7	91.5	84.6	83.6	

Table 2. Provision and utilization of Personal Protective Devices (PPDs.)

Characteristics	Large sites		Small sites		p-value
	KK (n=200)	NK (n=200)	KK (n=205)	NK (n=207)	
1. Shoes worn while working					0.91
- Sometimes or never	5.5	6.5	4.8	9.8	
- Always	94.5	93.5	95.2	90.2	
2. Type of shoes worn	(n=199)	(n=197)		(n=202)	<0.01
- Cut shoes/ slipper	39.2	48.2	48.8	57.9	
- Shoes	42.7	33.0	28.5	25.3	
- Boots	18.1	18.8	22.7	16.8	
3. Gloves worn					<0.01
- Never	57.0	64.0	57.5	59.0	
- Sometimes	16.0	27.0	22.2	33.2	
- Always	27.0	9.0	20.3	7.8	
4. Helmets worn					<0.01
- Never	64.5	90.5	91.3	94.6	
- Sometimes	12.0	7.0	3.9	3.9	
- Always	23.5	2.5	4.8	1.5	
5. Provision of PPDs by the companies					
5.1 Shoes	6%	9%	0	7%	****
5.2 Gloves	8%	9%	1%	4%	0.03
5.3 Helmets	2%	12%	1%	1%	0.86
5.4 Safety belts	0	2%	0	2%	****

Note: **** Cannot be determined due to the size of zero.

Table 3, Characteristics of employment and working patterns

Characteristics	Large sites		Small sites		p-value
	KK (n=200)	NK (n=200)	KK (n=205)	NK (n=207)	
1. Type of employment					<0.01
- Permanent	13.0	4.0	5.3	1.5	
- Temporary	87.0	96.0	94.7	98.5	
2. Previous occupations					
2.1 Construction workers	39.5	59.5	45.9	69.3	<0.01
2.2 Farmers	48.0	66.5	61.8	73.7	0.20
2.3 Others	85.7	97.2	91.9	93.1	0.44
3. Duration of working as construction workers (years)					
- 1 or less	31.5	36.0	41.5	34.1	<0.01
- 2 - 4	43.0	27.0	28.5	37.6	
- 5 - 10	19.5	28.5	16.4	21.4	
- 11 or more	6.0	8.5	13.6	6.9	
4. Number of companies worked with (including the current one)		(n=199)		(n=204)	
- 1	39.0	32.5	37.7	31.2	<0.01
- 2 - 4	47.0	37.5	38.2	39.0	
- 5 - 10	13.0	18.0	17.4	21.0	
- 11 or more	1.0	12.0	6.8	8.8	
5. Working patterns		(n=199)		(n=204)	
5.1 Excavation	23.0	21.5	18.8	41.5	<0.01
5.2 Concrete related work	43.5	51.5	61.4	65.9	0.01
5.3 Wood related work	52.0	41.0	44.9	51.7	0.42
5.4 Steel related work	27.0	39.5	26.1	54.6	<0.01
5.5 Carrying thing	31.0	26.5	26.1	42.0	<0.01