Healthy Workplace Indicators in Thailand : Phase 2 (A Pilot Study)

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Abstract

This study was a result of the second phase of a two-phase research project. In the previous phase, the draft of healthy workplace indicators was developed by means of literature review and soliciting of expert opinion. There were 46 indicators divided into 6 different groups. This phase of the project was a quantitative cross-sectional descriptive study which aimed at exploring the opinion of employers and occupational health officers (OHOs) of the enterprises towards the pilot set of healthy workplace indicators. The field data collection was conducted by means of a postal survey. Questionnaires were sent to 180 workplaces in Samutprakarn province. The response rates of employers and OHOs were 66.7 per cent (n = 120) and 68.3 per cent (n = 123), respectively. It was found that the majority of the enterprises had a workplace health promotion policy (59.3%), had health promotion activities (60.2%), did not have designated personnel responsible for health promotion (69.1%), had a health promotion budget (53.7%), were large scale enterprises (61.0%), and did not have a mother enterprise in foreign country (81.3%). In general, the mean scores of the opinions of employers and OHOs toward indicators in the appropriateness aspect were high. For the achievability aspect, there were 9 indicators which less than half of the employers thought they could achieve, and 10 indicators that less than half of the OHOs thought they could achieve. The opinion of employers and OHOs differed significantly in 4 indicators in the appropriateness aspect and 1 indicator in the achievability aspect.

In conclusion, both the employers and OHOs considered most of these indicators appropriate for the enterprises and most indicators were achievable and useful as a guideline and evaluation tool for workplace health promotion.

Key word : Healthy Workplace Indicators, Workplace Health Promotion

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Comprehensive health services comprise of health promotion, disease prevention, treatment, and rehabilitation. Basically, health promotion and disease prevention aim at primary prevention, i.e., preventing humans from getting diseases. The Ottawa Charter on Health Promotion, a result of the First International Conference on Health Promotion, defines health promotion as "the process of enabling people to increase control over, and to improve, their health"[1,2]. Health promotion may be achieved *via* several strategies such as creating partnerships, and implementing through various setting approaches. Setting approaches include schools, hospitals, cities, and workplaces[3,4].

Global health problems have shifted from communicable diseases to non-communicable diseases and illnesses resulting from risky health behavior[5]. Thailand, like several other countries, has put more effort and resources into improving health care settings and treatment services. Recently, it has been realized that this strategy increased health care costs and could improve the population's life span but not their quality of life. So health promotion was highlighted in the current Ninth National Health Development Plan as part of the human development. In Thailand, public and private sectors work together in health promotion activities in these settings with the Thai Health Promotion Foundation acting as the major facilitator, both financially and technically. Another key partner is the Department of Health, Ministry of Public Health.

Workplaces, in general, are dangerous places and workers are at risk of exposure to various health hazards. WHO estimated that 120 million workers suffered from occupational injuries annually and 200,000 of them died, and 68-157 million workers obtained occupational and work-related diseases each year[6,7]. In Thailand, the statistics of workplace injuries are around 33-34 per 1,000 employees per year which is still higher than the International Labor Organization's target of less than 26 per 1,000 employees. On the other hand, workplaces are the crucial place for workers to have access to comprehensive health services especially health promotion. Work is a key process and the workplace is a critical site for efforts towards health promotion and sustainable development[8]. If workers appreciate health promotion and healthy behaviors, they are likely to influence their families toward health promotion as well. If these activities could gain some success, they might be easily expanded to the workers' families since the workers are responsible for their family's financial status and therefore influence their family members' health behaviors[3,9].

WHO has recommended the Healthy Work Approach (HWA) which consists of 4 cornerstones including health promotion, occupational health and safety services, human resource management, and sustainable development[10-12]. HWA aims at improving the quality of life of workers. Workers' life and health are important not only to themselves but also to their families and the society at large. The success of workplace health promotion depends largely on the participation from all parties including employers, employees, health personnel, safety officers, and worker representatives. Such participation preferably includes the entire spectrum of the activities: policy setting, planning, implementing, contributing to the activities, and evaluating[13-15].

However, workplace health promotion activities in Thailand have been somewhat not comprehensive and directive, making it difficult to clearly evaluate the situation, success and obstacles. The activities varied from single projects to attack specific problems such as screening for hypertension, to sophisticated projects[16]. It would be better and more directive to have a set of indicators to be used both as a means and as an end, i.e., as an improvement guideline and as an evaluation tool. Since workplace health promotion in Thailand is relatively new[10], having healthy workplace indicators would definitely clarify the direction and boost the health promotion activities. The objective of the first phase of this research project was to propose a set of healthy workplace indicators for further use in the second phase. And the objective of this second phase was to conduct a pilot field trial using the set of healthy workplace indicators to assess its preliminary evaluation in terms of appropriateness and achievability of each indicator from the view point of employers and occupational health officers (OHOs).

MATERIAL AND METHOD

In Phase 1, the authors extensively reviewed articles and publications on health promotion[7,17-25], workplace health promotions and their measurement/evaluation, then synthesized the first draft of healthy workplace indicators. After proposing this draft to a group of 24 experts in health promotion,

occupational medicine/health, and other stakeholders, the authors solicited their comments and opinions, and then made appropriate changes. The second draft was the result of Phase 1[26] and was used in this Phase 2 study. Phase 1[26] by the authors yielded 46 healthy workplace indicators divided into 6 groups (see details in the Result section). Each indicator was accompanied by scoring criteria (not presented) to make it more objective and comprehensible.

The target population was workplaces with more than 50 employees since they were required by law to have at least one OHO (mainly a safety officer). The authors chose Samut Prakan province to conduct this pilot study because it is a highly industrialized area. The calculated sample size was 180 [27]. The authors stratified the workplaces into 16 types according to the Workmen Compensation Act, and randomly selected the workplaces from each type in proportion to the total number of workplaces of each type. Questionnaires containing the set of healthy workplace indicators were sent to employers and OHOs of these 180 stratified-randomly-selected workplaces, and asked them to participate in the study by evaluating the appropriateness and achievability of each indicator. The questionnaires were content-validated by a group of experts in occupational health/medicine and were pretested in 30 workplaces in Rayong province. Opinion about appropriateness of each indicator was asked by 5 rating scales. Opinion about achievability of each indicator was asked by 3 categories: no, uncertain, and yes. The descriptive data, explored factors related to employers' and OHOs' opinions were analayzed, and the employers' and OHOs' opinions were compared. The study was approved by the ethical committee of the Faculty of Medicine, Chulalongkorn University.

RESULTS

The Ottawa Charter addressed 5 major health promotion actions: build a healthy public policy, create a supportive environment, strengthen community actions, develop personal skills, and reorient health services. Most publications and articles also addressed these points in healthy workplaces. Concerning the external (outside the workplace) environment as well as the internal (inside the workplace) environment[3], the first phase by the authors yielded 46 healthy workplace indicators divided into 6 groups. Each indicator was accompanied by scoring criteria (not presented) to make it more objective and comprehensible.

The response rates were 66.7 and 68.3 per cent for employers and OHOs respectively. The response rates were not different by size of workplaces (number of workers) (data not shown), so the non-response bias was unlikely according to size of workplaces. The authors obtained 120 pairs of employers-OHOs from the same workplaces for comparison. General characteristics of employers and OHOs participating in the present study are shown in Table 1. There were only 3 workplaces (2.4%) with a health promotion policy written separately from other policies.

The majority of employers were male (63.3%), had a mean age of 41.11 years, had a bachelor degree (74.16%), were managing directors (91.7%), had a average duration in the current position for 7.79 years, and agreed to workplace health promotion (86.7%). The OHOs were male 52 per cent and female 48 per cent. They had a mean age of 36.04 years, had a bachelor degree (59.3%), were safety officers (54.5%), had the average duration in the current position for 6.47 years, and agreed to workplace health promotion (91.0%).

The employers replied that they had no policy on workplace health promotion (40%), but had workplace health promotion activities (60%), had no personnel responsible for workplace health promotion (69.2%), had a budget for workplace health promotion (54.2%), were in large scale workplaces (61.7%), and did not have a foreign mother company (81.8%). The OHOs replied that they had no policy on workplace health promotion (40.7%), had workplace health promotion activities (60.2%), did not have personnel responsible for workplace health promotion (69.1%), had a budget for workplace health promotion (53.7%), were in large scale workplaces (61.0%), and did not have a foreign mother company (81.3%). Both employers and OHOs gave rather similar answers.

Employers' and OHOs' opinions toward each indicator are shown in Table 2. For employers, their three lowest scores in terms of appropriateness were: giving employees an opportunity to perform various tasks, ensuring that the workplace has activities aimed at strengthening the relationship with the employees' families, and providing a stress management program for employees. For OHOs, their three lowest scores in terms of appropriateness were: giving employees an opportunity to perform various tasks, having health promotion plans: annual plans, short-term plans, and long-term plans, and providing an accident reduction program outside the workplace. These are shown in bold in Table 2.

Table 1. General characteristics of employers (n = 120) and occupational health officers (OHOs) (n = 123).

Characteristics	Employers		Occupational health officers	
	Number	Percentage	Number	Percentage
Gender				
Male	76	63.3	64	52.0
Female	44	36.7	59	48.0
Age				
Younger than 30 years	5	4.2	30	24.4
30-39 years	52	43.3	51	41.5
40-49 years	47	39.2	36	29.3
50-59 years	10	8.3	5	4.0
60 years or older	6	5.0	1	0.8
Employers : minimum = 25 years, maximum = 68 years, mean = 41.11 years, SD = 8.34 years				
OHOs : minimum = 22 years, maximum = 68 years, mean = 36.04 years, SD = 8.4 years				
Educational level				
Lower than bachelor	4	3.3	41	33.3
Bachelor	89	74.2	73	59.4
Master	26	21.7	9	7.3
Not answer	1	0.8	-	-
Position in company				
Owner	10	8.3	4	3.3
Managing director	110	91.7	1	0.8
Safety officer	-	-	67	54.5
Personnel officer	-	-	48	39.0
Nurse	-	-	1	0.8
Others	-	-	2	1.6
Duration in current position				
Less than 5 years	39	32.5	55	44.7
5-9 years	41	34.2	40	32.5
10-14 years	9	7.5	2	1.6
15-19 years	20	16.7	20	16.3
20-24 years	9	7.5	1	0.8
25 years or more	2	1.7	5	4.1
Employers : minimum = 0.3 years, maximum = 28 years, mean = 7.79 years, SD = 6.25 years				
OHOs : minimum = 0.3 years, maximum = 30 years, mean = 6.47 years, SD = 6.1 years				
Opinion about workplace health promotion				
Disagree	3	2.5	4	3.3
No opinion	13	10.8	7	5.7
Agree	104	86.7	112	91.0
Having workplace health promotion activities				
No	46	38.3	47	38.2
Yes	72	60.0	74	60.2
Not answer	2	1.7	2	1.6
Having personnel assigned for workplace health promotion				
No	83	69.2	85	69.1
Yes	37	30.8	38	30.9
Having budget for workplace health promotion				
No	55	45.8	57	46.3
Yes	65	54.2	66	53.7
Size of workplace				
Medium (50-199 employees)	46	38.3	48	39
Large (200 employees or more)	74	61.7	75	61
Having a foreign mother company				
No	97	80.8	100	81.3
Yes	23	19.2	23	18.7

Table 2. Employers' and occupational health officers' opinions toward each indicator (n = 120 and 123 respectively) (SD = standard deviation, numbers in parentheses are percentages).

Indicators	Employers					Occupational health officers				
	Appropriateness		Achievability			Appropriateness		Achievability		
	Mean	SD	Yes	Uncertain	No	Mean	SD	Yes	Uncertain	No
Group 1. Policy regarding workplace health promotion.										
1. Having a policy that addresses the importance of health promotion, prepared as written documents and available to all employees.	3.81	0.92	85 (70.9)	34 (28.3)	1 (0.8)	3.80	1.01	86 (69.9)	33 (26.8)	4 (3.3)
2. Having personnel with knowledge and understanding in the area of health to take responsibility for workplace health promotion directly (as their primary job or with enough time to do this job).	3.36	1.11	56 (46.7)	48 (40.0)	16 (13.3)	3.49	1.15	59 (48.0)	41 (33.3)	23 (18.7)
3. Having a safety, health and environment committee.	3.98	0.94	94 (78.3)	24 (20.0)	2 (1.7)	4.11	0.86	99 (80.5)	21 (17.1)	3 (2.4)
4. Having health promotion plans: annual plans, short-term plans (shorter than 3 years), and long-term plans (longer than 3 years).	3.34	1.06	63 (52.5)	46 (38.3)	11 (9.2)	3.30	0.99	62 (50.4)	48 (39.0)	13 (10.6)
5. Having rules and regulations for occupational health and safety.	3.98	0.88	97* (81.5)	19* (16.0)	3* (2.5)	3.99	0.88	95 (77.2)	25 (20.3)	3 (2.4)
6. Evaluating health promotion activities and improving them accordingly.	3.62	0.95	80 (66.7)	32 (26.6)	8 (6.7)	3.59	1.06	75@ (61.5)	34@ (27.9)	13@ (10.6)
Average of Group 1	22.09	4.61				22.28	4.59			
* n = 119, @ n = 122										
Group 2. Workplace health environment.										
1. Ensuring that employees participate in decision- making, planning, implementing, and evaluating health issues.	3.59	0.96	70 (58.4)	37 (30.8)	13 (10.8)	3.44	1.01	61 (49.6)	45 (36.6)	17 (13.8)
2. Ensuring that the time established for each task is appropriate and adequate.	3.64	0.87	77 (64.1)	35 (29.2)	8 (6.7)	3.58	0.83	71 (57.7)	42 (34.2)	10 (8.1)
3. Giving employees an opportunity to perform various tasks.	3.09	0.98	46 (38.3)	46 (38.3)	28 (23.4)	3.10	1.07	48 (39.0)	46 (37.4)	29 (23.6)
4. Making sure that employees have enough break time.	3.81	0.88	90 (75.0)	23 (19.2)	7 (5.8)	3.87	0.82	97 (78.9)	20 (16.3)	6 (4.8)
5. Having good relations among employees on every level.	4.03	0.79	95 (79.2)	21 (17.5)	4 (3.3)	4.02	0.84	95 (77.2)	23 (18.7)	5 (4.1)
6. Ensuring that shift work is properly managed and has the least possible effect on employees' health.	3.72	1.05	97 (80.8)	20 (16.7)	3 (2.5)	3.82	1.06	93 (75.6)	21 (17.1)	9 (7.3)
7. Supporting and preparing employees for their retirement.	3.57	1.03	63 (52.5)	45 (37.5)	12 (10.0)	3.66	0.94	55 (44.7)	49 (39.8)	19 (15.5)
8. Ensuring that employees obtain health information from both health personnel and their self-study in the workplace.	3.64	0.88	78 (65.0)	33 (27.5)	9 (7.5)	3.72	0.87	83 (67.5)	32 (26.0)	8 (6.5)
9. Ensuring that employees participate in the improvement of their working environment so as to make it healthier.	3.67	0.96	81 (67.5)	33 (27.5)	6 (5.0)	3.78	0.95	78 (63.4)	36 (29.3)	9 (7.3)
Average of Group 2	32.76	5.94				32.99	5.66			

Table 2. Employers' and occupational health officers' opinions toward each indicator (n = 120 and 123 respectively) (SD = standard deviation, numbers in parentheses are percentages) (Continued).

Indicators	Employers					Occupational health officers				
	Appropriateness		Achievability			Appropriateness		Achievability		
	Mean	SD	Yes	Uncertain	No	Mean	SD	Yes	Uncertain	No
Group 3. Physical environment.										
1. Ensuring that the workplace cafeteria has nutritionally balanced and safe food for employees.	3.94	0.97	93 (77.5)	16 (13.3)	11 (9.2)	3.98	0.96	86 (69.9)	20.0 (16.3)	17 (13.8)
2. Making sure that lighting is appropriate for work.	4.30	0.74	115 (95.8)	3 (2.5)	2 (1.7)	4.25	0.79	112 (91.1)	9 (7.3)	2 (1.6)
3. Having appropriate workplace ventilation.	4.14	0.81	105 (87.5)	11 (9.2)	4 (3.3)	4.20	0.76	108 (87.8)	12 (9.8)	3 (2.4)
4. Having appropriate control measures for dust and toxic gas in the workplace.	4.04	1.01	96 (80.0)	20 (16.7)	4 (3.3)	4.07	0.86	94 (76.4)	26 (21.1)	3 (2.4)
5. Having appropriate control measures for noise in the workplace.	3.97	1.00	97 (80.9)	16 (13.3)	7 (5.8)	4.05	0.86	94 (76.4)	21 (17.1)	8 (6.5)
6. Having equipment to help in handling and moving materials to reduce employees' physical load.	4.11	0.83	107 (89.2)	9 (7.5)	4 (3.3)	4.15	0.77	106 (86.2)	15 (12.2)	2 (1.6)
7. Having enough and clean toilet facilities for every employee.	4.23	0.76	111 (92.5)	6 (5.0)	3 (2.5)	4.27	0.73	112 (91.1)	7 (5.7)	4 (3.3)
8.Having proper waste management, including provisions concerning hazardous waste.	4.20	0.75	111 (92.5)	7 (5.8)	2 (1.7)	4.20	0.74	111 (90.3)	11 (8.9)	1 (0.8)
Average of Group 3	32.93	5.46				33.16	5.33			
Group 4. Lifestyle and health skill of employees.										
1. Providing education and training in occupational health and safety for every employee.	3.90	0.88	94 (78.3)	23 (19.2)	3 (2.5)	4.08	0.83	100 (81.3)	19 (15.4)	4 (3.3)
2. Providing education and training in health promotion for every employee.	3.78	0.90	79 (65.9)	37 (30.8)	4 (3.3)	3.85	0.92	82 (66.7)	30 (24.4)	11 (8.9)
3. Providing a nutritional program for employees.	3.27	1.05	57 (47.5)	49 (40.8)	14 (11.7)	3.35	1.07	51 (41.5)	54 (43.9)	18 (14.6)
4. Providing an anti-smoking program for employees.	3.60	1.08	51 (42.5)	50 (40.7)	19 (15.8)	3.54	1.20	50 (40.7)	54 (43.9)	19 (15.4)
5. Providing an alcohol-free and drug-free workplace program.	3.97	1.04	89 (74.1)	23 (19.2)	8 (6.7)	4.06	1.11	90 (73.2)	26 (21.1)	7 (5.7)
6. Providing an exercise program for employees	3.41	1.06	69 (57.5)	37 (30.8)	14 (11.7)	3.52	1.15	65 (52.8)	43 (35.0)	15 (12.2)
7. Providing a stress management program for employees.	3.21	1.09	43 (35.8)	56 (46.7)	21 (17.5)	3.45	1.09	49 (39.8)	49 (39.8)	25 (20.4)
8. Providing a reproductive health program for employees covering such areas as family planning, sexually-transmitted diseases and AIDS prevention.	3.23	1.09	57 (47.5)	46 (38.3)	17 (14.2)	3.34	1.09	61 (49.6)	42 (34.1)	20 (16.3)
9. Providing an accident reduction program in the workplace.	4.10	0.82	105 (87.5)	4 (11.7)	1 (0.8)	4.15	0.83	105 (85.4)	17 (13.8)	1 (0.8)

Table 2. Employers' and occupational health officers' opinions toward each indicator (n = 120 and 123 respectively) (SD = standard deviation, numbers in parentheses are percentages) (Continued).

Indicators	Employers					Occupational health officers				
	Appropriateness		Achievability			Appropriateness		Achievability		
	Mean	SD	Yes	Uncertain	No	Mean	SD	Yes	Uncertain	No
10. Providing an accident reduction program outside the workplace.	3.28	1.07	50 (41.7)	51 (42.5)	19 (15.8)	3.33	1.15	45 (36.6)	51 (41.4)	27 (22.0)
11. Ensuring that the workplace has activities aimed at strengthening the relationship with the employees' families.	3.21	0.97	45 (37.5)	58 (48.3)	17 (14.2)	3.37	1.04	47 (38.2)	54 (43.9)	22 (17.9)
12. Ensuring that the workplace has activities aimed at strengthening the relationship with the surrounding community.	3.22	0.91	57 (47.5)	50 (41.7)	13 (10.8)	3.47	0.93	65 (52.8)	42 (34.2)	16 (13.0)
Average of Group 4	42.18	9.40				43.51	9.88			
Group 5. Health services.										
1. Having appropriate health and medical records.	3.94	0.86	100 (83.3)	18 (15.0)	2 (1.7)	4.03	0.84	98 (79.7)	22 (17.9)	3 (2.4)
2. Having a good system for recording occupational diseases and injuries.	4.03	0.94	103 (85.9)	13 (10.8)	4 (3.3)	4.12	0.82	104 (84.6)	16 (13.0)	3 (2.4)
3. Having medicine and materials for first aid.	4.27	0.81	115 (95.8)	5 (4.2)	0 (0)	4.31	0.71	115 (93.5)	6 (4.9)	2 (1.6)
4. Performing a preplacement examination according to risk factors.	4.02	0.95	89 (74.2)	23 (19.2)	8 (6.7)	4.09	0.85	87 (70.7)	27 (22.0)	9 (7.3)
5. Having a regular periodic physical examination according to risk factors.	4.01	0.95	96 (80.0)	40 (16.7)	4 (3.3)	4.01	0.92	85 (69.1)	30 (24.4)	8 (6.5)
6. Ensuring that employees are properly notified of the result of health tests.	4.04	0.78	103 (85.9)	13 (10.8)	4 (3.3)	4.08	0.76	98 (79.7)	18 (14.6)	7 (5.7)
7. Having a return-to-work physical examination in case of long-term sick leave.	3.64	1.03	70 (58.4)	43 (35.8)	7 (5.8)	3.77	1.09	83 (67.5)	33 (26.8)	7 (5.7)
8. Conducting and recording the results of occupational health and safety activities.	3.76	0.87	91 (75.8)	24 (20.0)	5 (4.2)	4.05	0.82	97 (78.8)	21 (17.1)	5 (4.1)
9. Reducing the extent of sick leaves resulting from illness of employees in the past year.	3.75	0.89	77 (64.2)	32 (26.7)	11 (9.2)	3.83	0.95	87 (70.7)	24 (19.5)	12 (9.8)
Average of Group 5	35.46	6.03				36.29	6.13			
Group 6. Environmental impact.										
1. Preventing pollution of the environment outside the workplace.	3.82	0.82	80 (66.7)	34 (28.3)	6 (5.0)	3.95	0.88	89 (72.4)	24 (19.5)	10 (8.1)
2. Ensuring that the workplace has a role in supporting and promoting a healthy lifestyle in the community.	3.50	0.97	67 (55.8)	44 (36.7)	9 (7.5)	3.67	1.04	77 (62.6)	33 (26.8)	13 (10.6)
Average of Group 6	7.33	1.59				7.63	1.71			

In terms of achievability, Table 3 shows and compares indicators that less than half of the employers and OHOs replied that they could achieve the terms.

Factors related to employers' and OHOs' opinions are shown in Table 4. For employers, factors significantly related to their opinion about appropriateness were age, opinion toward workplace health promotion, and having personnel assigned to be responsible for workplace health promotion. Factors significantly related to their opinion about achievability were gender, having a policy on workplace health promotion, having workplace health promotion activities, having personnel assigned to be responsible for workplace health promotion, having a budget for workplace health opromotion, and having a foreign mother company. For OHOs, factors significantly related to their opinion about appropriateness were gender, having a policy on workplace health promotion, having workplace health promotion activities, having personnel assigned to be responsible for workplace health promotion, having budget for workplace health opromotion, and having a foreign mother company. Factors significantly related to their opinion about achievability were their position in the company, having a policy on workplace health promotion, having workplace health promotion activities, having personnel assigned to be responsible for workplace health promotion, having a budget for workplace health opromotion, size of workplace, and having a foreign mother company.

When comparing employers' and OHOs' opinions towards the appropriateness of each indicator using paired *t*-test (n = 120 pairs)[28,29], the authors found that they were significantly different in 4 indicators. Three of them were in Group 4: providing education and training in occupational health and safety for every employee, providing a stress management program for employees, and ensuring that the workplace has activities aimed at strengthening the relationship with the surrounding community, and one was in Group 5: conducting and recording the results of occupational health and safety activities.

When comparing employers' and OHOs' opinions towards the achievability (combination of 'uncertain' and 'no' *vs* 'yes') of each indicator using McNemar's test (n = 120 pairs), it was found that they were significantly different in only 1 indicator in Group 5: having a regular periodic physical examination according to risk factors.

Table 3. Indicators that less than half of the employers and occupational health officers replied that they could achieve.

Indicators		Employers	Occupational health officers
Group 1: 2.	Having personnel with knowledge and understanding in the area of health to take responsibility for workplace health promotion directly (as their primary job or with enough time to do this job).	Yes	Yes
Group 2: 1.	Ensuring that employees participate in decision- making, planning, implementing, and evaluating health issues.		Yes
Group 2: 3.	Giving employees an opportunity to perform various tasks.	Yes	Yes
Group 2: 7.	Supporting and preparing employees for their retirement.		Yes
Group 4: 3.	Providing a nutritional program for employees.	Yes	Yes
Group 4: 4.	Providing an anti-smoking program for employees.	Yes	Yes
Group 4: 7.	Providing a stress management program for employees.	Yes	Yes
Group 4: 8.	Providing a reproductive health program for employees covering such areas as family planning, sexually-transmitted diseases and AIDS prevention.	Yes	Yes
Group 4: 10.	Providing an accident reduction program outside the workplace.	Yes	Yes
Group 4: 11.	Ensuring that the workplace has activities aimed at strengthening the relationship with employees' families.	Yes	Yes
Group 4: 12.	Ensuring that the workplace has activities aimed at strengthening the relationship with the surrounding community.	Yes	

Table 4. Factors related to employers' and occupational health officers' opinions.

Factors	Employers					Occupational health officers				
	Number	Appropriateness (n = 120)		Achievability (n = 119)		Number	Appropriateness (n = 123)		Achievability (n = 122)	
		Mean rank score	P-value	Mean rank score	P-value		Mean rank score	P-value	Mean rank score	P-value
Gender [a]										
Male	76	64.76	0.078	65.72	0.018	64	70.63	0.005	63.15	0.594
Female	44	53.15		50.25		59	52.64		59.74	
Age [@]		(r = -0.195)	0.033	(r = -0.129)	0.163		(r = -0.014)	0.874	(r = 0.117)	0.200
Educational level [#]			(n = 119)		(n = 118)					
Lower than bachelor	4	46.88	0.730	47.38	0.726	41	63.51	0.194	56.78	0.462
Bachelor	89	60.15		66.53		73	63.71		62.86	
Master	26	61.50		57.88		9	41.28		71.50	
Position in company										
Owner	10	48.30	0.247 [a]	40.20	0.058 [a]					
Managing director	110	61.61		61.82		7	61.07	0.098 [#]	43.29	0.008 [#]
Safety officer/nurse						68	66.41		68.70	
Personnel officer						48	52.12		50.05	
Duration in current position [@]		(r = -0.150)	0.101	(r = -0.069)	0.455		(r = 0.073)	0.424	(r = 0.061)	0.508
Opinion toward workplace health promotion [#]										
Disagree	3	45.67	0.032	49.50	0.635	4	64.63	0.273	52.25	0.065
No opinion	13	38.04		53.15		7	40.93		32.36	
Agree	104	63.74		61.17		112	63.22		63.67	
Having policy on workplace health promotion [#]										
No	48	55.36	0.104	45.98	0.001	50	58.86	0.034	41.51	< 0.001
Yes, but not written	45	58.62		65.91		46	56.26		69.61	
Yes, and written	27	72.76		73.30		27	77.59		85.00	
Having workplace health promotion activities [a]			(n = 118)		(n = 117)			(n = 121)		(n = 120)
No	46	53.33	0.117	42.93	< 0.001	47	53.00	0.045	39.61	< 0.001
Yes	72	63.44		69.04		74	66.08		73.49	
Having personnel assigned to be responsible for workplace health promotion [a]										(n = 120)
No	83	54.56	0.005	53.01	0.001	85	53.82	< 0.001	50.99	< 0.001
Yes	37	73.82		76.11		38	80.29		85.65	

[a] Mann -Whitney U test [@] Spearman rank correlation coefficient [#] Kruskal Wallis test

Table 4. Factors related to employers' and occupational health officers' opinions (Continued).

Factors	Employers						Occupational health officers					
	Number	Appropriateness (n = 120)		Achievability (n = 119)			Number	Appropriateness (n = 123)		Achievability (n = 122)		
		Mean rank score	P-value	Mean rank score	P-value			Mean rank score	P-value	Mean rank score	P-value	
Having budget for workplace health promotion activities [a]												
No	55	54.94	0.107	41.11	< 0.001		57	53.34	0.012	43.17	< 0.001	
Yes	65	65.21		75.69			66	69.48		77.05		
Size of workplace [a]												
Medium (50-199 employees)	46	57.45	0.448	54.43	0.170		48	57.26	0.238	53.16	0.039	
Large (200 employees or more)	74	62.40		63.39			75	65.03		66.73		
Having a foreign mother company [a]												
No	97	57.54	0.055	55.20	0.002		100	58.03	0.010	55.79	< 0.001	
Yes	23	73.00		80.02			23	79.26		86.07		

[a] Mann -Whitney U test @ Spearman rank correlation coefficient # Kruskal Wallis test

DISCUSSION

The first phase of the present research yielded a set of six groups comprised of 46 indicators for healthy workplace. This second phase was essentially the try-out and feasibility assessment of these indicators, before introducing them to the public.

Most OHOs were safety officers, whereas there was only 1 nurse (0.8%). This indicates that most occupational health activities were currently under the responsibility of safety officers, few workplaces had health personnel responsible for occupational health. This is similar to a study by Ngamkiatpaisal et al[30], which revealed that physicians had limited roles in occupational health in the workplace. Most of them provided only services on medical treatment. Moreover, most of them were hired on a part-time basis, and hence had few chances to contribute to occupational health activities. This was emphasized by the finding that less than half of the employers and OHOs replied that they could achieve this indicator: having personnel with knowledge and understanding in the area of health to take responsibility for workplace health promotion directly.

Large workplaces had higher resources and budgets to allocate for workplace health promotion and other occupational health activities - this can easily explain the difference between medium and large enterprises. It was noted that employers scored lower than OHOs on every indicator, this might be because OHOs were exposed to workplace health promotion and occupational health more than employers and hence saw the potency of the success more clearly than employers.

Only 3 workplaces had a workplace health promotion policy written and separate from other policies. This may reflect the current situation that most workplaces are not so interested in workplace health promotion. Since policy is the key component leading to most workplace strategies and activities, this should be one key point that all stakeholders working on workplace health promotion should consider when working with workplaces. They should try to encourage them to put workplace health promotion into their policy as the very first step to approach the workplace setting.

Knowing factors related to employers' and OHOs' opinions will help concerned bodies when launching and expanding the workplace health promotion program that they should consider to correct factors such as - not having a budget for workplace health promotion, not having workplace health pro-

motion activities, and not having personnel assigned to be responsible for workplace health promotion.

Indicators in Group 1 - policy regarding workplace health promotion - seems to be easily achieved since it is required by law that a workplace with more than 50 employees must hire at least 1 safety officer and have a safety, health and environment committee. Indicators in Group 2 - giving employees an opportunity to perform various tasks - got the lowest score. This may reflect the fact that most industries preferred the Taylorism way of working and producing, i.e., one employee performs only one task and another performs the nest task sequentially in a chain as frequently seen in the assembly line. The authors suggest that this indicator be removed or changed to: "let the employees have an opportunity to learn something new and have career development". Indicators in Groups 3 and 5 got high appropriateness and achievability scores indicating that they were realistic and could be achieved. The exceptions seemed to be: having a return-to-work physical examination in case of long-term sick leave, and reducing the extent of sick leaves resulting from illness of employees in the past year. This is similar to the Canadian's National Quality Institute's suggestion that physical environment always gets improved earlier and easier than other perspectives[11], which may be due to rules and regulations, as well as some globally common standards such as ISO series 14000 and 18000. In general, it seems that healthy workplace indicators that go along with the laws or international standards are perceived as realistic, appropriate and achievable.

Nevertheless, those indicators getting low scores should be thoroughly considered. If they are still useful, then concerned bodies should enhance the workplace's capability to achieve these indicators by making them realize the importance and benefit of workplace health promotion, education and training, providing technical support, providing financial support directly or indirectly (such as tax reductions for workplaces achieving a high score on healthy workplace indicators).

It was also found that the employers seemed not to have enough confidence that the employees could participate in workplace health promotion activities - this should also be corrected. Since employee participation is one of the major key success factors in all workplace health issues. Concerned bodies should expand the workplace health promotion idea through employers that they should enable their employees to improve control over and improve their own health (empowerment)[2,21], and employers will benefit financially by obtaining more productivity. One strategy is to integrate these indicators into other standards or guidelines such as those of the Department of Health, the Ministry of Public Health, Thai Industrial Standards Institute (TISI), International Organization for Standardization (ISO), or Social Accountability (SA), and encourage their use nationwide by, for instance, conducting a contest for a Prime Minister Award.

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ตัวชี้วัดการสร้างเสริมสุขภาพในสถานประกอบการ : ระยะที่ 2 (โครงการนำร่อง)

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งานวิจัยนี้เป็นระยะที่ 2 ของโครงการวิจัยซึ่งมี 2 ระยะ ระยะแรกเป็นการจัดทำร่างตัวชี้วัดการสร้างเสริมสุขภาพในสถานประกอบการ โดยทำการทบทวนวรรณกรรมและสอบถามความเห็นจากผู้เชี่ยวชาญ ได้ตัวชี้วัด 46 ตัว จัดเป็น 6 กลุ่ม ส่วนระยะที่ 2 นี้ เป็นการสำรวจเชิงปริมาณแบบภาคตัดขวาง โดยมีวัตถุประสงค์ที่จะสำรวจความเห็นของเจ้าของสถานประกอบการและเจ้าหน้าที่ด้านอาชีวอนามัยในสถานประกอบการต่อร่างตัวชี้วัดที่ได้มาจากระยะที่ 1 การเก็บข้อมูลดำเนินการโดยส่งแบบสำรวจทางไปรษณีย์ไปยังสถานประกอบการ 180 แห่งในจังหวัดสมุทรปราการ ได้ข้อมูลตอบกลับจากเจ้าของสถานประกอบการ 120 คน (ร้อยละ 66.7) และเจ้าหน้าที่ด้านอาชีวอนามัย 123 คน (ร้อยละ 68.3) พบว่าสถานประกอบการส่วนใหญ่มีนโยบายด้านการสร้างเสริมสุขภาพในสถานประกอบการ (ร้อยละ 59.3) มีกิจกรรมสร้างเสริมสุขภาพ (ร้อยละ 60.2) แต่ไม่มีบุคลากรรับผิดชอบงานสร้างเสริมสุขภาพโดยตรง (ร้อยละ 69.1) มีงบประมาณเพื่อการสร้างเสริมสุขภาพ (ร้อยละ 53.7) เป็นสถานประกอบการขนาดใหญ่ (ร้อยละ 61) และไม่ได้เป็นสาขาของบริษัทในต่างประเทศ (ร้อยละ 81.3) ในภาพรวมความเห็นของเจ้าของสถานประกอบการและเจ้าหน้าที่ด้านอาชีวอนามัยต่อตัวชี้วัดทั้งหมดในแง่ของความเหมาะสมนั้นอยู่ในระดับสูง ส่วนในแง่ของความสามารถในการทำให้บรรลุตัวชี้วัดดังกล่าวได้นั้น มีตัวชี้วัด 9 ตัวที่เจ้าของสถานประกอบการน้อยกว่าครึ่งหนึ่งคิดว่าสามารถทำให้บรรลุได้ และมีตัวชี้วัด 10 ตัวที่เจ้าหน้าที่ด้านอาชีวอนามัยน้อยกว่าครึ่งหนึ่งคิดว่าสามารถทำให้บรรลุได้ นอกจากนี้ยังพบว่าความเห็นของเจ้าของสถานประกอบการและเจ้าหน้าที่ด้านอาชีวอนามัยแตกต่างกันอย่างมีนัยสำคัญในแง่ของความเหมาะสม 4 ตัวชี้วัด และในแง่ของความสามารถในการบรรลุได้ 1 ตัวชี้วัด

โดยสรุป ทั้งเจ้าของสถานประกอบการและเจ้าหน้าที่ด้านอาชีวอนามัยคิดว่าตัวชี้วัดเหล่านี้เหมาะสมที่จะใช้ในสถานประกอบการ และตัวชี้วัดส่วนใหญ่สามารถทำให้บรรลุได้ และสามารถใช้ประโยชน์ทั้งในลักษณะเป็นแนวปฏิบัติและเป็นเครื่องมือประเมินผลสำหรับการสร้างเสริมสุขภาพในสถานประกอบการ

คำสำคัญ : ตัวชี้วัดการสร้างเสริมสุขภาพในสถานประกอบการ, การสร้างเสริมสุขภาพในสถานประกอบการ

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