

เวชศาสตร์ร่วมสมัย

นิพนธ์ต้นฉบับ

## Occupational health practice, knowledge, and needs for further education of health professionals in the Eastern Seaboard region.

Pornchai Sithisarankul\*

Winai Wiriyakitjar\* Luedhavuth Barnyen\*

**Sithisarankul P, Wiriyakitjar W, Barnyen L. Occupational health practice, knowledge, and needs for further education of health professionals in the Eastern Seaboard region.**

**Chula Med J 1997 Jun;41(6): 475-85**

**Objective** : *To obtain information on occupational practice, knowledge, and needs for further education of health professionals in the Eastern Seaboard region*

**Setting** : *A short course in occupational health for health professionals in Region 3*

**Research design** : *Descriptive cross-sectional study*

**Subjects** : *Health professionals attending a short course to refresh knowledge in occupational health held in April 1997 by the Office of the Region 3 Health Inspector-General, the Ministry of Public Health*

**Methods** : *At the beginning of the short course, a specially designed questionnaire was used to obtain information on personal data, occupational health practice, knowledge, and needs for further education. The 33 questions covered major occupational health topics. Descriptive statistics were used in the data analyses.*

**Results** : *There were 32 persons attending the short course and responding to the questionnaire. Nineteen (59.4%) were male and 13 female. Their ages ranged from 21 to 56 years (average 35.2 years). Twenty-four (75%) were physicians, and one-third of these were Thai Board certified or had a certificate of proficiency equivalent to board certified in one of the specialties. The majority of those completing the questionnaire did not hold any administrative positions in their organizations, did not have any previous education in occupational health, and worked in organizations that did not have any existing occupational plans/personnel. Regarding the 33 questions involving occupational health/medicine, the majority of the respondents accepted that they had no, or not enough, knowledge and needed further education in these topics.*

**Conclusion** : *Occupational health services in Thailand are mostly provided by general practitioners, by specialists other than occupational medicine physicians, and even by non-physicians. The shortage of competent occupational health professionals in Thailand, especially physicians, appears to constitute a crisis and the authors propose some short-term and long - term measures to alleviate the problems.*

**Key words** : *Occupational health practice, Eastern Seaboard.*

Reprint request : Sithisarankul P, Department of Preventive and Social Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok 10330, Thailand.

Received for publication. May 10, 1997.

พรชัย สิทธิศรีธัญกุล, วินัย วิริยกิจจา, ลือธวัช บานเย็น. การปฏิบัติงานด้านอาชีวอนามัย ความรู้ และความต้องการฝึกอบรมด้านอาชีวอนามัยของบุคลากรสาธารณสุขในเขตพื้นที่ชายฝั่งทะเลด้านตะวันออก. จุฬาลงกรณ์เวชสาร 2540 มิ.ย; 41(6): 475-85

- วัตถุประสงค์** : เพื่อศึกษาข้อมูลเกี่ยวกับบริการด้านอาชีวอนามัย ความรู้ และความต้องการฝึกอบรมเพิ่มเติมด้านอาชีวอนามัยของบุคลากรสาธารณสุขในเขตพื้นที่ชายฝั่งทะเลด้านตะวันออก
- สถานที่ที่ทำการศึกษา** : การอบรมอาชีวอนามัยแก่บุคลากรสาธารณสุข จัดโดยสำนักผู้ตรวจราชการเขต 3 กระทรวงสาธารณสุข
- รูปแบบการวิจัย** : การวิจัยเชิงพรรณานาชนิดตัดขวาง ณ เวลาหนึ่ง
- ประชากรที่ศึกษา** : บุคลากรสาธารณสุข สังกัดกระทรวงสาธารณสุข, กองทัพเรือ และสภากาชาดไทยในเขตพื้นที่ชายฝั่งทะเลด้านตะวันออก ที่เข้ารับการอบรมเพิ่มพูนความรู้ด้านอาชีวอนามัยในเดือนเมษายน พ.ศ. 2540 ซึ่งจัดโดยสำนักผู้ตรวจราชการเขต 3 กระทรวงสาธารณสุข
- วิธีการศึกษา** : ก่อนเริ่มการอบรมผู้วิจัยได้ขอให้บุคลากรสาธารณสุขที่เข้ารับการอบรมตอบแบบสอบถาม ซึ่งครอบคลุมคำถามเกี่ยวกับข้อมูลส่วนตัวของผู้ตอบแบบสอบถาม การบริการอาชีวอนามัยความรู้และความต้องการฝึกอบรมเพิ่มเติมด้านอาชีวอนามัย ในหัวข้อที่มีความสำคัญและเกี่ยวข้องกับการปฏิบัติงานด้านอาชีวอนามัย จำนวน 33 หัวข้อ
- ผลการศึกษา** : มีผู้เข้ารับการอบรมและตอบแบบสอบถาม 32 คน อายุเฉลี่ย 35.2 ปี 3 ใน 4 เป็นแพทย์ และ 1 ใน 3 ของแพทย์มีวุฒิบัตรหรืออนุมัติบัตรสาขาใดสาขาหนึ่งอยู่แล้ว ผู้ตอบแบบสอบถามส่วนใหญ่ไม่มีตำแหน่งบริหารในหน่วยงาน, ไม่เคยรับการอบรมด้านอาชีวอนามัยมาก่อน, และปฏิบัติงานในหน่วยงานที่ไม่มีแผนงาน/บุคลากรด้านอาชีวอนามัยโดยเฉพาะ สำหรับหัวข้อความรู้เกี่ยวกับอาชีวอนามัย

## วิจารณ์และสรุป

/อาชีพเวชศาสตร์ทั้ง 33 หัวข้อที่สอบถาม ส่วนใหญ่ผู้ตอบแบบสอบถามจะไม่มีความรู้ หรือมีความรู้แต่ไม่พอเพียง และเกือบทั้งหมดต้องการการฝึกอบรมเพิ่มเติมในทุกหัวข้อ

: บริการด้านอาชีวอนามัยส่วนใหญ่ยังดำเนินการโดยแพทย์เวชปฏิบัติทั่วไป, แพทย์ผู้เชี่ยวชาญเฉพาะทางที่ไม่ใช่แพทย์อาชีวเวชศาสตร์, หรือโดยบุคลากรที่ไม่ใช่แพทย์ การขาดแคลนบุคลากรสาธารณสุข โดยเฉพาะแพทย์ที่มีความรู้ความชำนาญด้านอาชีวอนามัยของประเทศอยู่ในภาวะวิกฤต และผู้วิจัยได้นำเสนอแนวทางแก้ไขปัญหทั้งในระยะสั้น และระยะยาว

The World Health Organization has defined the term "health" as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity". And to be concisely defined, "occupational health" is "health of the workers". Whereas, "occupational medicine" can be defined as "medical aspect of occupational health". And from the perspective of preventive medicine, occupational medicine is simply "the preventive medicine for occupational settings".

Thailand is one of the newly industrialized countries. Industry is growing rapidly, and so are occupational health problems. However, Thailand is badly in need of health personnel competent in occupational health, especially occupational medicine physicians. The Eastern Seaboard Project to develop that area has been underway for many years. Health personnel serving in that area should represent a good source of information about current occupational health practice, health knowledge, and needs for further education in occupational health among health personnel especially physicians. The data and results from this study should be useful in improving occupational health personnel and services.

### Materials and Methods

At the beginning of a short course, the authors used a specially designed questionnaire to collect data and information from health professionals in the Eastern Seaboard region. They were attending the short course to refresh knowledge

in occupational health held by the Office of the Region 3 Health Inspector-General, the Ministry of Public Health during April 24-25, 1997 at Chonburi Hospital. These health professionals learned about this short course from the Office of the Region 3 Health Inspector-General and attended this short course voluntarily. The questionnaire covered personal information of the personnel, current occupational health services, occupational health knowledge, and needs for further education in occupational health. It covered 33 topics important to occupational health.<sup>(1-4)</sup> The data was encoded and analyzed by SPSS for Windows version 7.0 using descriptive statistics.

### Results

The course attendants were health professionals from hospitals in the Eastern Seaboard region, the Ministry of Public Health, Somdej-Na-Sriracha Hospital, the Thai Red Cross, and Queen Sirikit Hospital, the Royal Thai Navy. There were 32 attendants and all completed the questionnaires. Nineteen (59.4%) were male and 13 were female. Their ages ranged from 21 to 56 years (mean 35.2 years). Twenty-four (75%) were physicians, two had master degrees, and six were nurses with bachelor degrees. Among the physicians, five were board certified and three had certificates of proficiency equivalent to being board certified in one of the specialties; in other words, one-third of the physicians were specialists.

The majority (23 persons = 71.9%) did not hold any administrative position in their organizations. Twenty-five (78.1%) had not had any previous training in occupational health, and eighteen (56.3%) worked in organizations that did not have any existing occupational health plans or personnel. Fifteen of these 18 agreed that they needed occupational health plans or personnel, but nine of them could not state how to accomplish that. Only six gave suggestions. The suggestions were that personnel get more training, that an exclusive occupational health unit be established in the

organization, that there be formal education, that there be a committee and written plan for occupational health, that internal restructuring be performed and someone take charge of the jobs while an occupational unit should be permanently set in the provincial medical office, and that there be clear objectives, projects, scope of activities and personnel support. Two did not answer this question, but one stated that occupational health plans or personnel were not needed though he did not state a reason.

**Table.** Shows frequency of the responders (N = 32) to questions related to knowledge and needs for further education in occupational health (high percentage results are in parentheses).

Topic	Knowledge				Needs for further education		
	no	yes, not enough	yes enough	not answer	need	not need	not answer
1. Definition and scope of occupational health	7	21 (65.6%)	4	-	27 (84.4%)	1	4
2. Definition and scope of occupational medicine	10	19 (59.4%)	3	-	28 (87.5%)	1	3
3. Definition of occupational disease or work-related disease	7	19 (59.4%)	6	-	28 (87.5%)	2	2
4. History taking for patient suspected of having an occupational disease	7	21 (65.6%)	2	2	29 (90.6%)	1	2
5. Physical examination for patient suspected of having an occupational disease	6	23 (71.9%)	2	1	29 (90.6%)	1	2
6. Special investigation for patient suspected of having an occupational disease	11	20 (62.5%)	-	1	28 (87.5%)	2	2

Table. Continue.

Topic	Knowledge				Needs for further education		
	no	yes, not enough	yes enough	not answer	need	not need	not answer
7. Occupational disease diagnosis	10	20 (62.5%)	1	1	28 (87.5%)	2	2
8. Treatment of patient with occupational disease	8	23 (71.9%)	-	1	27 (84.4%)	2	3
9. Occupational disease prevention	10	20 (62.5%)	2	-	28 (87.5%)	-	4
10. Workers' health promotion	10	19 (59.4%)	3	-	28 (87.5%)	-	4
11. Rehabilitation of patient with occupational disease	14	16 (50%)	1	1	30 (93.8%)	-	2
12. Physical occupational health hazards	9	20 (62.5%)	3	-	29 (90.6%)	1	2
13. Biological occupational health hazards	8	22 (68.8%)	2	-	30 (93.8%)	-	2
14. Chemical occupational health hazards	9	21 (65.6%)	1	1	30 (93.8%)	-	2
15. Psychosocial occupational health hazards	8	23 (71.9%)	1	-	30 (93.8%)	1	1
16. Occupational hygiene	11	18 (56.3%)	1	2	29 (90.6%)	-	3
17. Occupational safety	8	22 (68.8%)	2	-	30 (93.8%)	-	2
18. Ergonomics	18 (56.3%)	12	2	-	30 (93.8%)	-	2
19. Occupational lung diseases	7	23 (71.9%)	1	1	30 (93.8%)	-	2
20. Occupational dermatoses	8	22 (68.8%)	1	1	29 (90.6%)	-	3
21. Noise-induced hearing loss	6	24 (75%)	2	-	28 (87.5%)	1	3

Table. Continue.

Topic	Knowledge				Needs for further education		
	no	yes, not enough	yes enough	not answer	need	not need	not answer
22. Laws related to occupational health and occupational medicine	16 (50%)	15	1	-	30 (93.8%)	-	2
23. Occupational traumatic injuries	5	23 (71.9%)	3	1	30 (93.8%)	1	1
24. Occupational cumulative trauma disorders	10	20 (62.5%)	2	-	30 (93.8%)	1	1
25. Occupational cancers	14	16 (50%)	1	1	31 (96.9%)	-	1
26. Occupational cardiovascular diseases	14	16 (50%)	1	1	29 (90.6%)	1	2
27. Work-related disorders of reproduction	12	18 (56.3%)	1	1	30 (93.8%)	-	2
28. Occupational neurotoxic disorders	10	21 (65.6%)	-	1	30 (93.8%)	-	2
29. Occupational epidemiology	13	17 (53.1%)	2	-	31 (96.9%)	-	1
30. Occupational health problem diagnosis in occupational settings	14	16 (50%)	2	-	31 (96.9%)	-	1
31. Occupational health problem solving in occupational settings	12	18 (56.3%)	2	-	32 (100%)	-	-
32. Occupational health problem prevention in occupational settings	12	18 (56.3%)	2	-	32 (100%)	-	-
33. Occupational health management	15 (46.9%)	15 (46.9%)	2	-	28 (87.5%)	-	4



As shown in the table regarding the questions about knowledge in all 33 topics, the majority (81.3 - 96.9%) of the participants admitted that they had no or not enough knowledge, and almost all (84.4 - 100%) of them believed they needed further education in all topics. It is notable that there were only two persons answering that they felt they had enough knowledge in occupational health management, one of the most important topics. One was a physician with a certificate of proficiency in general practice holding a position as an expert in preventive medicine in a provincial medical office. The other was the head of the social medicine division in a general hospital having a master degree of science in environmental health. Both held administrative positions which might expose them more to occupational health management activities. Nevertheless, both answered that they needed more education in the topic of occupational health management.

Regarding the question as to whether they would enter the occupational medicine residency training program in order to study and take the board exam, only 6 physicians answered affirmatively. Fifteen answered that they would not, and 3 did not answer this question.

Regarding the question as to whether they would take the exam to obtain the certificate of proficiency in occupational medicine if they were eligible, fourteen physicians answered affirmatively. Eight answered that they would not, and 2 did not answer this question.

## Discussion

The authors used the specially designed questionnaire to gather information from health personnel in the region regarding current occupational practice, occupational health knowledge, and needs for further education on occupational health/medicine. There were 32 participants, 19 males and 13 females. Three-fourths were physicians, and one-third of them were board-certified or had a certificate of proficiency in one of the specialties. The majority (71.9%) did not hold any administrative position in their organizations, 78.1% did not have any previous education in occupational health, and 56.3% worked in organizations without any occupational plans/personnel.

Regarding the 33 topics in occupational health/medicine, the majority (81.3 - 96.9%) of the participants had no or not enough knowledge, and almost all (84.4 - 100%) believed they needed further education in all of these topics. This 2-day short course seemed to provide only part of these topics, and a full course education is more appropriate.

Most of the participating physicians were not interested in entering the occupational medicine residency training program, but they were interested in taking the exam for the certificate of proficiency in occupational medicine if they were eligible.

The authors would like to point out the fact that most of the occupational health services are

currently rendered by general practitioners, physicians with specialties other than occupational medicine, or even by non-physicians. This is true even in a heavily industrialized area<sup>(5)</sup> such as the Eastern Seaboard region. Most of this personnel did not have any previous education in occupational health, and they worked in the organizations without any occupational health/medicine plan/personnel. Compared to the magnitude of the problems, we have to admit that the shortage of occupational health personnel constitutes a crisis. Realization of the problems and extensive co-operation among organizations charged with correcting these problems are crucial.

Short-term measures should include further training for this personnel so they can provide better occupational health services, integrate occupational health plans into routine plans, co-operate with other organizations in charge of occupational health problems in each province, and coordinate among government and private sectors. The Department of Health and the Office of the Permanent Secretary of the Ministry of Public Health should provide policy, budget, and academic support. The Ministry of University Affairs should provide academic and research support.

Long-term measures should include introduction of increased occupational health/medicine agenda (covering, but not limiting to, the topics listed in the questionnaire) into the medical curriculum, and increased numbers of well trained occupational health professionals, including

physicians<sup>(6)</sup>, nurses, engineers, occupational hygienists, safety officers<sup>(7)</sup>, and ergonomists so as to meet the national requirements and the future growth of industries. Other measures should include an increase in the number of well equipped laboratory facilities to provide support in occupational disease diagnoses, enforcement of laws related to occupational health, improved working environments, and decreased or eliminated occupational health hazards in all occupational settings.

The Thai Medical Council's roles should include setting examination and eligibility criteria so that interested physicians can take the examination for certification of proficiency in occupational medicine, and this will enhance their professional development. In the meantime, it should also set the criteria for training institutes, and eligibility criteria for physicians to enter the occupational medicine residency training program. The occupational medicine residency training program should begin as soon as possible in order to meet national requirements. It may also be appropriate to classify occupational medicine as one of the specialties having a shortage of trained personnel or it should be specially promoted so that newly graduated physicians can enter the training program.

## Conclusion

The authors used a designed questionnaire to obtain information on occupational practice,

knowledge, and needs for further education on occupational health/medicine of health professionals in the Eastern Seaboard region. The information was obtained at the beginning of a short course to refresh knowledge in occupational health for health professionals held by the Office of the Region 3 Health Inspector-General, the Ministry of Public Health, during April 24-25, 1997 at Chonburi Hospital. There were 32 persons attending the short course and answering the questionnaire. Nineteen of them were male. Their ages ranged from 21 to 56 years. Twenty-four of them were physicians, one-third of these were Thai Board certified or had a certificate of proficiency equivalent to board certified in one of the specialties. The majority of those completing the questionnaire did not hold any administrative positions in their organizations, did not have any previous education in occupational health, and worked in the organizations that did not have any existing occupational plans/personnel. Regarding the 33 topics involving occupational health/medicine, the majority accepted that they had no, or not enough knowledge and needed further education in these topics.

Currently, occupational health services in Thailand are mostly provided by general practitioners, by specialists other than occupational medicine physicians, and even by non-physicians. The shortage of competent occupational health professionals in Thailand, especially physicians, appears to constitute a crisis and the

authors propose some short-term and long-term measures to alleviate the problems.

### Acknowledgment

The authors would like to thank Luang Chavalekpreecha (Tian) and the Ms.Pin Vorayingyong Foundation for the grant to support this research.

### References

1. Hoffman H, Guidotti TL. Basic clinical skills in occupational medicine. *Primary Care; Clin Office Pract* 1994 Jun; 21(2):225-36
2. Parker G. Occupational medicine and training for general practice. *Br J Gen Pract* 1996 Nov;46 (412):683-684
3. Callahan EW. Quality in occupational health care: management's view. *J Occupat Med* 1994 Apr;36(4):410-3
4. Levy BS, Wegman DH. (Eds) *Occupational Health: Recognizing and Preventing Work-Related Disease*. 2nd ed. Boston : Little, Brown, 1988: 29-54
5. มาลีณี วงศ์พานิช. สถานการณ์ปัจจุบันด้านอาชีวอนามัยในประเทศไทย และข้อเสนอแนะ. *วารสารสุขศึกษา* 1985; 8(32): 33-43
6. Suwanaban N. The role of industrial physicians. *J Med Assoc Thai* 1970 Sep; 53(9): 646-7
7. Supannatas S, Charoenca N. Preparing for better environmental and occupational healths in Thailand. *J Public Health* 1994; 24(1): 45-7