

Occupational Health Nursing Practice, Education, and Research in Korea

An International Update

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Korea is a relatively new industrialized country. Because of the increase in socioeconomic status, a general health care system has been established to operate the national health insurance system and increase the number of health professionals and facilities. Since 1991, occupational health nurses have been working as health managers at the workplace and as part of a hospital based group occupational health service. An estimated 1,651 occupational health nurses worked as occupational health managers nationwide in 1998.

By law, the role of occupational health manager includes providing preventive and primary care, safety management, and inspection of the working environment. The role of occupational health nurses in the field has influenced nursing education at both the undergraduate and graduate levels. Currently, there is no certification for occupational health nurse specialists.

The development of occupational health nursing in Korea has been influenced by the socioeconomic status of the country and the advanced occupational health nurse model in other developed countries. This article

introduces the profession of occupational health nursing in Korea. A brief overview of the history of occupational medicine, the socioeconomic situation, general health status, and the health care system in Korea is presented.

In addition, occupational health in general, including occupational health regulations, occupational health organizations, and major occupational health problems in Korea, are discussed. The authors describe the delivery system of occupational health nursing services, education for occupational health nurses, and research in occupational health nursing, and discuss the future direction for occupational health nursing practice, education, and research in Korea.

HISTORIC AND SOCIOECONOMIC BACKGROUND

The Korean Peninsula, surrounded by the Pacific Ocean in the east, is just across the East Sea from Japan. The Peninsula is similar in size to the United Kingdom or New Zealand. As a result of Cold War tensions, the Korean Peninsula has been divided since 1945 at the 38th parallel North Latitude into the Republic of Korea (South Korea) and North Korea. South Korea (Korea hereafter) is a democratic republic and possesses 45% of the total area of the Peninsula. The total population in Korea is 47.3 million, spread over 99,373 million square kilometers.

Prior to 1955, industry in Korea consisted mainly of home based handcraft work, and the ammunition industry during the Japanese occupation (1919 to 1945). However, these industrial facilities were all destroyed during the Korean War (1950 to 1953). During that time, coal was the primary source of energy in industry. After the war, modern textile and coal mining industries were

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established, and many coal mines were developed. The first case of silicosis in Korea was reported during this period (Park, 1998). In the past 30 years, the industrial structure in Korea has changed rapidly, moving from a primary industry to a secondary or tertiary focused structure. Since the beginning of the first 5 Year Economic Development Plan in 1962 (Korean Embassy, 2000), the Korean economy has developed rapidly, and the quality of life has improved gradually. Korea joined the Organization for Economic Cooperation and Development (OECD) as the 29th member in December 1996.

In 1999, the reported per capita gross national income was \$8,581 (Korea National Statistical Office, 2000c). According to the Yearbook of Labor Statistics, the working age population (i.e., older than 15) exceeded 35.8 million, and the economically active population participating in the labor force was 21.6 million (Ministry of Labor, 2000b). The labor force participation rate was 60.5%, with 9.0% in agriculture, forestry, and fishery; 20.8% in mining and manufacturing; and 70.2% in services.

In 1999, the estimated unemployment rate was 6.3%. Average monthly wages were 1,599,000 Korean won (approximately \$1,230). Average monthly and weekly working hours were 208.1 and 47.9 hours, respectively, with the legal number of working hours set at 44 hours per week (Korea National Statistical Office, 2000b).

HEALTH CARE SYSTEM AND HEALTH STATUS

Korea has a national health insurance system. Enacted in 1977, the National Health Insurance Law covers workers in all businesses with more than 500 employees. According to the National Health Insurance Law, noncash benefits include health care benefits and health care services for childbirth. Health care benefits are payable for diagnosis, pharmaceutical or health care materials, surgery, alternative medicine treatments, hospitalization, nursing, and transportation (Ministry of Health & Welfare, 2000a).

Various institutions approved by the Ministry of Labor are actively involved in providing occupational health services. These include 91 hospitals performing periodic health examinations of workers exposed to hazardous agents and providing clinical diagnosis and treatment of occupational diseases; 56 institutions conducting mainly worksite environmental monitoring; and 66 group occupational health service facilities (Lee, 1999). A more

detailed description of group occupational health services is presented in the following section.

The number of health professionals in Korea has increased rapidly during the past decade. Yet, compared with developed countries, the number of physicians and registered nurses in Korea is relatively low. In 1999, there were approximately 168 physicians for every 100,000 inhabitants, compared with 220 physicians for every 250 inhabitants in other developed countries. The number of nurses per 100,000 individuals was approximately 336 (Ministry of Health & Welfare, 2000b).

Korea is currently experiencing a period of epidemiological transition. During the past 30 years, the incidence of infectious disease has decreased, and the incidence of chronic degenerative disease has consistently increased. Improvements in living conditions and nutrition, an increase in nuclear families, and medical technology development clearly have contributed to the decrease in mortality rates from communicable diseases.

However, the mortality rates from chronic diseases have been rising. This shift is expected to continue because of the aging population, changes in traditional diet patterns, an increase in the number of individuals who smoke, and lack of physical activity. The crude mortality rates (per 100,000) of major adult diseases in 1999 were malignant neoplasm, 116.6; cerebrovascular disease, 72.9; chronic liver disease, 23.5; diabetes mellitus, 21.8; and hypertension, 7.6 (Korea National Statistical Office, 2000a).

Because most chronic degenerative diseases require long term care and treatment, the importance of prevention and health promotion has been stressed. According to the National Health Promotion Act enacted by the Korean government in 1995, health promotion programs must include health education, disease prevention, nutrition improvement, and practice of healthy lifestyle (Ministry of Health & Welfare, 1995).

OCCUPATIONAL HEALTH REGULATIONS

Along with industrial development, the number of cases of industrial accidents and occupational diseases has been increasing. The Labor Standards Act, the first occupational health law in Korea, was passed in 1953 (Korean Chamber of Commerce and Industry, 1996). As part of this Act, employers were required to provide safe working conditions and measures for workers' health. This Act was used to set the criteria for occupational health until the early 1980s. As the Korean economy rapidly grew, the Articles of the Labor Standards Law were not sufficient to control the increasing numbers of industrial accidents and occupational diseases. The situation required more specific and practical laws. As a result, the Industrial Safety and Health Law was enacted in 1981 and amended in 1990 (Ministry of Labor, 1990).

The Industrial Accident Compensation Insurance Act was enacted in 1963 to provide the framework for providing compensation to employees with work related injuries and diseases, disability, or death (Ministry of Labor, 1999). Based on this Act, the Korea Labor Welfare Corporation (2001) is responsible for:

- Compensation, treatment, and rehabilitation of work related injuries and handicaps.
- Establishment and management of the insurance facilities needed for the compensation.
- Implementation of welfare projects for workers with occupational injuries.
- Other welfare projects for workers in small and medium sized enterprises.

In 1984, the Pneumoconiosis Prevention Law was established to provide the legal framework for treating pneumoconiosis and to protect workers from this disease (Ministry of Labor, 1981). In addition, several other laws related to occupational safety and health were established, such as the Fire Service Act, the Traffic Safety Act, the Atomic Control Act, and the Mining Security Act.

The Korean government also initiated a government funded subsidiary occupational health program in 1993 for businesses with fewer than 50 employees (Lee, 1998a). This program provides financial support and temporary occupational health expert support to small enterprises suffering from poor work environments and weak financial conditions. The Ministry of Labor manages this occupational health program.

The Occupational Safety and Health Law

The Occupational Safety and Health Law requires employers to provide annual health examinations and regular worksite surveillance, and report their findings to the local branch of the Ministry of Labor (1990). Employers are required by law to provide worksite surveillance and health examination at least twice a year for workers exposed to hazardous agents such as dust, lead, organic solvents, specific chemicals, confined space, noise, heat, cold, and coke oven emissions.

The Occupational Safety and Health Law requires appointment of occupational health managers at all workplaces with more than 50 employees (Ministry of Labor, 1990). The occupational health managers may be occupational health nurses, occupational health physicians, or industrial hygienists. The size and type of industry determine the type and number of occupational health managers. Employers with more than 300 employees must hire their own occupational health managers. Employers of worksites with fewer than 300 employees may consign occupational health managers from a professional organization through the national health care system.

Group Occupational Health Services

In 1990, the Ministry of Labor initiated and passed legislation allowing small and medium sized businesses to purchase Group Occupational Health Services. This new type of service is a package of comprehensive occupational health services at a capitation based fee. The Group Occupational Health Service System was initiated to improve occupational health services to underserved workers and to relieve employers' financial burden in small scale businesses with fewer than 300 employees (Lee, 1999). With the Group Occupational Health Service System, small businesses are not required to hire their own occupational health professionals for their plants.

In this group type occupational health delivery model, small scale enterprises may obtain the occupational health services they require through a group health service contract with a qualified occupational health service facility. The health service facility then provides all types of occupational health services required by law, including worksite environmental monitoring, health examinations (e.g., preplacement, general, special health examinations), and occupational health management (Yoo, 1999). The Group Occupational Health Services are financed by fees paid by each enterprise on a capitation basis. A report indicates a total of 66 registered group occupational health service institutions provide services to more than 6,300 manufacturing industries (Lee, 1999).

OCCUPATIONAL HEALTH ORGANIZATIONS

Government Organizations

Occupational health organizations in Korea are partially controlled by the Ministry of Labor, which has a local office in each region. Each labor office is responsible for providing practical guidance and supervision to industries related to occupational health. Several public organizations operate under the Ministry of Labor, such as the Korea Occupational Safety and Health Agency [KOSHA], including the Occupational Safety Training Institute; the Occupational Safety and Health Research Institute; and the Korea Labor Welfare Corporation.

Korea Occupational Safety and Health Agency. The KOSHA was established in 1987 to improve worker health and safety and to promote accident prevention measures by employers through research, development, and dissemination of methods to prevent occupational accidents (KOSHA, 2001a). Comparable to the National Institute for Occupational Safety and Health (NIOSH) in the United States, KOSHA has 17 local branches, two research institutes (Occupational Safety and Occupational Health Research Institutes), and the Occupational Safety Training Institute. The main activities of KOSHA (2001b) are:

- Research focusing on occupational health and safety.
- Testing and approval of safety devices and personal protective equipment.
- Provision of technical guidance and assistance to plants.
- Professional training for occupational health and safety professionals.

Occupational Safety Training Institute. The Occupational Safety and Health Research Institutes, established in 1989, conduct research related to occupational health and workplace environment (KOSHA, 1997).

Korea Labor Welfare Corporation. The Korea Labor Welfare Corporation was established in 1974 to handle issues related to compensation for injured workers and the rehabilitation, compensation, and treatment of handicaps. To perform its function effectively and efficiently, the Corporation has 46 regional offices, nine hospitals to treat workers injured or disabled by occupational accidents, and one rehabilitation training institute (Lee, 1999).

Professional Organizations

The numerous professional organizations in Korea, as in any other country, play an important role by provid-

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ing often neglected public or private needs, such as dissemination of scientific knowledge, research, scholarship, and continuing education. The first occupational health organization in Korea was the Korea Industrial Health Association established in 1963. Since the Association was established, various occupational health related projects have been initiated through 11 provincial branches and 12 service centers across the country (Korea Industrial Health Association, 1993).

Because the field of occupational health nursing in Korea has been developed fairly recently, no professional organizations existed for these nurses until the 1990s. The first professional organization of occupational health nurses, the Korea Industrial Nursing Association (which later changed its name to the Korea Association of Occupational Health Nurses [KAOHN]), was established in 1994 to improve health services for workers and advance professional career opportunities for its members (Yoon, 1994). The KAOHN is governed by an 11 member, elected Board of Directors, and has seven regional associations across the nation. Currently, the KAOHN has approximately 600 members and holds scientific meetings twice a year (KAOHN, 2001).

The Korea Academic Society of Occupational Health Nursing (KASOHN) was established in 1990 to promote scholarship and research among occupational health nurses (Yoon, 1994). Currently, KASOHN has approximately 300 members. The KASOHN began publishing a professional journal, the *Korean Journal of Occupational Health Nursing*, once a year in 1991. Publication was increased to twice a year in 1997.

Other professional organizations in Korea include the Korean Society of Occupational Medicine, established in 1988, and the Korean Society of Occupational and Environmental Hygiene, founded in 1990. In 2000, the KASOHN held the first joint conference for occupational health with the Korean Society of Occupational Medicine and the Korean Society of Occupational and Environmental Hygiene.

MAJOR OCCUPATIONAL HEALTH PROBLEMS

Industrial accident and occupational disease occurrence is closely related to the increase in industrial development and the number of industrial workers. Since 1970, various occupational diseases have been reported,

including heavy metal and organic solvent poisoning (Cho, 1991). The introduction of new technology and facilities in the 1980s brought rapid changes in working conditions and environment. Accordingly, the pattern of industrial accidents and occupational diseases became diverse, and their intensity magnified.

Major occupational diseases reported from 1972 to 1996 included coal miner's pneumoconiosis, noise induced hearing loss, occupational dermatitis, lead and chromium intoxication, and organic solvent intoxication (Lee, 1999). Coal miner's pneumoconiosis and noise induced hearing loss currently are the most prevalent occupational diseases in Korea. However, because of a reduction in the mining industry, the number of workers with these conditions has decreased. According to the 1999 special health examination results, prevalence rates for coal miner's pneumoconiosis and noise induced hearing were 3.3 and 18.9 per 10,000 workers, respectively (Ministry of Labor, 2000a).

Other occupational diseases, such as organic solvent poisoning, lead poisoning, and chromium poisoning have low prevalence rates of less than 0.3 per 10,000 workers. Since 1995, there has been a significant increase in other diseases, such as musculoskeletal disease among video display terminal workers and cerebrovascular diseases from job stress.

The overall rate of industrial accidents for all industries in Korea has decreased from 5.91% in 1965 to 1.30% in 1993. However, this number is still relatively high when compared with other countries. For example, the overall rate of occupational accidents in 1990 was 1.76 in Korea, compared with 0.57 in Japan and 0.7 in Thailand (Korea Worker's Safety & Health Research Association, 1991). Although the frequency rate of occupational accidents has decreased since the 1970s, the degree of severity and magnitude of occupational accidents has increased. The death rate for occupational accidents increased from 2.9 per 10,000 individuals in 1991 to 3.08 per 10,000 individuals in 1997 (KOSHA, 2001b).

DELIVERING OCCUPATIONAL HEALTH NURSING SERVICES

The development of occupational health nursing is fairly recent in Korea and there is still a lack of specialization in the field. Most occupational health nurses in Korea are working as occupational health managers at the workplace, or as part of a group occupational health service. It is estimated that 1,651 occupational health nurses work as occupational health managers nationwide (Lee, 1998b).

Occupational health nursing services in Korea have been developed in three stages (Yoon, 1994). From 1961 to 1980, nurses were included as members of the occupational health care personnel in industry. At that time, no national law mandated qualification of occupational health personnel. Thus, nonmedical personnel, such as human resources employees, often played the role of occupational health personnel.

Since 1981, nurses have been recognized as occupational health professionals. However, the role of the occupational health nurse was limited to providing first aid at

the plant dispensary. In the latter half of the 1980s, incidence rates of occupational diseases and injuries increased. For instance, a case of lead poisoning in a 17 year old and a group carbon disulfide poisoning drew public attention to legal regulation. In response to this pressure, the Korean government began to amend laws and create a master occupational health plan to prevent occupational disease and injury (Ministry of Labor, 1991).

When the Occupational Safety and Health Law was amended in 1991 to reinforce employers' responsibility for employee health and safety, the role of occupational health nurses changed from first aid provider to occupational health manager (Ministry of Labor, 1990). The responsibilities of occupational health managers, as required by law, are outlined in the Sidebar.

Nurses working as occupational health managers perform responsibilities similar to physicians or industrial hygienist occupational health managers. With guidelines from the Ministry of Labor, the roles of occupational health nurses at the group occupational health service institutions are similar to the roles of occupational health managers in industry.

EDUCATION AND TRAINING FOR OCCUPATIONAL HEALTH NURSES

Undergraduate and Graduate Programs

Although education and training for occupational health nurses in Korea awaits further development, with the increasing technical level and degree of specialization, a remarkable improvement in undergraduate and graduate programs occurred between 1991 and 1996. Nursing schools providing occupational health nursing practice based lectures increased from 7.3% in 1991 to 25.6% in 1996 (June, 1998). Schools offering more than 15 class hours of occupational health nursing has increased from 33.3% in 1991 to 46.6% in 1996 (June, 1998).

Content of the curriculum in occupational health nursing includes:

- Introduction to occupational health.
- Occupational epidemiology.
- Industrial hygiene.
- Occupational disease and injury.
- Law and policy.
- Health education.
- Concept of occupational health nursing.
- Roles of the occupational health nurse.
- Occupational health nursing process.

Among these content areas, occupational health nursing process was the most emphasized area and the number of programs offering this content has increased from 43.9% in 1991 to 88.4% in 1996. The number of nursing schools providing graduate education in occupational health also increased from 4 in 1991 to 10 in 1996. However, by 1991 only one school had developed an occupational health nursing program at the master's level as an independent specialty course (June, 1998).

Continuing Education

Prior to 1991, the Korea Industrial Health Association offered continuing education for occupational health

Occupational Health Manager Responsibilities Required by Law

- Establishment of an industrial accident prevention plan.
- Preparation and modification of safety and health management regulations.
- Safety and health education of employees.
- Inspection and improvement of the work environment, such as measurement of hazardous working conditions.
- Management of health including medical examinations of workers.
- Investigation of the causes of industrial accidents and the establishment of preventive measures.
- Recording and maintaining statistics related to industrial accidents and health problems.
- Confirming that safety and protective devices related to safety and health are in proper working condition at the time of purchase.
- Providing medication and treatment to employees.
- Providing emergency care when necessary.

professionals, including occupational health nurses (Korea Industrial Health Association, 1993). Between 1991 and 1994, the Industrial Safety Training Institute, a part of the Korea Industrial Safety Cooperation, provided continuing education, with one nursing faculty responsible for occupational health nurse training (Lee, 1998a). The Industrial Safety Training Institute is supported by the Ministry of Labor and the Industrial Accident Compensation Insurance Law (Yoon, 1994).

After the KAOHN was established in 1994, it began providing continuing education for occupational health nurses. According to the Industrial Safety and Health Law, occupational health nurses should complete 36 hours of introductory training at the time of their appointment and 24 hours of continuing education every 2 years (Ministry of Labor, 1990). The content of the training courses includes:

- Industrial safety and health law.
- Introduction of occupational health.
- Health education methodology.
- Planning and evaluation.
- Periodic health examination.
- Occupational disease.
- Primary care.
- Emergency care.
- Management.
- Industrial environment evaluation.

Training

When an economic crisis occurred in Korea in 1997, the Korean government passed the Special Law of Enter-

The health promotion leader's course is aimed at developing nurses' abilities for planning and implementing workplace health promotion programs, such as exercise, smoking cessation, and stress management.

prise Activity Restriction Mitigation to lighten employers' responsibilities (Lee, 1998b). This special law changed the education and training requirement for occupational health personnel, including occupational health nurses, from mandatory to voluntary.

Along with this change, the Industrial Safety Training Institution initiated a new course—a 24 hour health promotion leader's course—over 4 days, plus a 1 day field trip. The health promotion leader's course is aimed at developing nurses' abilities for planning and implementing workplace health promotion programs, such as exercise, smoking cessation, and stress management.

RESEARCH IN OCCUPATIONAL HEALTH NURSING

Increased occupational health regulations and education have boosted the number of research studies conducted in the field of occupational health in Korea. The Ministry of Labor, the Korean Research Foundation, the Korea Science and Engineering Foundation, and other agencies are providing funding for research. However, research activity in occupational health nursing is still in its infancy in Korea.

Research funding for occupational health nurses is very limited. According to a recent analysis (Lim, 2001) of 94 studies published in the *Journal of Occupational Health Nursing* from June 1991 to May 2000, the majority (82%) of the studies were descriptive survey research. Others articles included experimental studies (9%), literature reviews (5%), and case studies (4%). Only 3 of 94 published papers were from funded projects.

Until the mid 1990s, occupational health nursing research was focused primarily on the role and job satisfaction of occupational health nurses. Since then, more attention has been paid to occupational health problems, risk factors and awareness of health, and disease prevention and health promotion behaviors. The number of research studies has dramatically increased since 1998, and survey studies gradually have been replaced by studies with experimental design (Lim, 2001).

CONCLUSION

Occupational health nurses face many tasks in advancing the field of occupational health nursing in Korea. Leaders of the KAOHN have been making efforts to improve the quality and diversity of independent occu-

pational health nurses' service delivery. Since 1999, the KAOHN has been supported by public funding from local governments and the Ministry of Labor to provide occupational health services to small scale businesses.

It is hoped the KAOHN will continue this independent occupational health service role (KAOHN, 2001). Currently, one of the major activities of the KAOHN is the development of practice guidelines for occupational health nurses based on the role of occupational health managers specified in the Occupational Safety and Health Law (Ministry of Labor, 1990).

The Future of Education and Practice

Changes in law and policy have led to rapid growth of occupational health nursing education at various levels. Occupational health services required by the Occupational Safety and Health Law include, among others:

- Consultation on health examination results.
- Occupational disease management.
- Worksite environmental monitoring.
- Worker training related to health, safety, and the use of personal protective equipment.

To perform these roles as occupational health managers, occupational health nurses need to be well educated in occupational safety and health. However, the majority of occupational safety and health training mechanisms for occupational health nurses have been on the job training, short term education programs, workshops, or continuing education.

It is important to incorporate basic occupational health nursing content into the undergraduate nursing curriculum. In addition, advanced degree programs in occupational health nursing must be developed to produce management level occupational health nurses. Some young Korean nurses are pursuing master's and doctoral degrees focusing on occupational health nursing in other countries, such as the United States and England, where occupational health nursing is well developed. It is hoped they will actively contribute to the development of graduate programs in occupational health nursing in Korea when they return from studying abroad.

The Ministry of Labor proposed the certificate of occupational health nurse specialist to the Ministry of Health and Welfare in 2000. It is expected the Medical Law will be revised to allow certification in occupational health nursing specialty during the next year. The National Health Promotion Act was established in 1995, and there has been growing interest in health promotion among occupational health professionals, including occupational health nurses (Ministry of Health & Welfare, 1995). In particular, the role of occupational health nurses in health promotion has been greatly emphasized.

Occupational health nurses have been participating in special training programs to improve their competence in health promotion. Nurses need to take advantage of the special training opportunities available to implement health promotion programs. In addition, health promotion at the worksite should be included in nursing curricula at both the undergraduate and graduate levels.

The Future of Research

Research plays a significant role in the development of occupational health planning and implementation, training and education, risk reduction, and health promotion. Unfortunately, research in the area of occupational health nursing in Korea is remarkably scarce. Since the KAOHN was established in 1994, occupational health nurses in Korea have become more actively involved in research. However, a great deficit in worksite intervention research based on theoretical frameworks still exists.

More intervention studies need to be tested. Along with national studies, occupational health nurses in Korea could also pursue collaborative research work with researchers from other countries. Development of occupational health nursing in Korea must be continued by sharing experience and knowledge with occupational health nurses within and outside Korea.

REFERENCES

- Cho, K.S. (1991). *Occupational health*. Seoul, Korea: Sumun-sa.
- June, K.J., Cho, T.R., & Kim, S.Y. (1998). Transition of occupational health nursing education in Korea. *Journal of University of Occupational and Environmental Health*, 20(Suppl.), 116-122.
- Korea Association of Occupational Health Nurses. (2001). *Report on occupational health service for small-scale industries*. Seoul: Author.
- Korea Industrial Health Association. (1993). *The history of 30 years of Korea Industrial Health Association*. Seoul: Author.
- Korea Labor Welfare Corporation (KOWC). (2001). *History of KOWC*. Retrieved January 2, 2003, from <http://www.welco.or.kr/edefault.asp>
- Korea National Statistical Office. (2000a). *Annual report on the cause of death statistics*. Seoul: Author.
- Korea National Statistical Office. (2000b). *Major statistics of Korea economy*. Seoul: Author.
- Korea National Statistical Office. (2000c). *Social indicators in Korea*. Seoul: Author.
- Korea Occupational Safety and Health Agency (KOSHA). (1997). *Occupational Safety and Health Research Institute*. Retrieved January 21, 2003, from <http://www.kosha.or.kr/english/englishhtml>
- Korea Occupational Safety and Health Agency (KOSHA). (2001a). *About KOSHA*. Retrieved January 2, 2003, from <http://www.kosha.or.kr/english/englishhtml>
- Korea Occupational Safety and Health Agency (KOSHA). (2001b). *Annual report 2000*. Retrieved January 2, 2003, from <http://www.kosha.or.kr/english/englishhtml>
- Korea Worker's Safety and Health Research Association. (1991). *Changes in industrial accidents and severe accidents*. Seoul: Author.
- Korean Chamber of Commerce and Industry. (1996). *Labor law*. Retrieved January 20, 2003, from http://www.english.korcham.net/bus/bus04_3.asp
- Korean Embassy. (2000). *The start of Korea's growth in the 1960s*. Retrieved January 20, 2003, from http://www.asianinfo.org/asian-info/korea/eco/start_of_growth_in_the_19602.htm
- Lee, S.H. (1999). Occupational medicine in Korea. *International Archives of Occupational Environmental Health*, 72(7), 1-6.
- Lee, S.H. (1998a). *Occupational health services in Korea*. Retrieved January 21, 2003, from <http://www.occuphealth.fi/e/info/asian/ap298/Se-Hoon.htm>
- Lee, S.E., Kim, Y.I., June, K.J., & Kim, H.J. (1998b). Developing the joint employment system of occupational health managers for the minor enterprises in Korea (Part I). *Korean Journal of Occupational Health Nursing*, 7(1), 97-114
- Lim, K.H., & Park, K.M. (2001). The research trends of papers in the Korean Journal of Occupational Health Nursing. *Korean Journal of Occupational Health Nursing*, 10(2), 142-152.
- Ministry of Health and Welfare. (1995). *National health promotion act*. Retrieved January 2, 2003, from http://healthguide.kihasa.re.kr/eng/sub_frame5.html

IN SUMMARY

Occupational Health Nursing Practice, Education, and Research in Korea

An International Update

June K.J., Hong, O., & Cho, T.R.

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- 1 In Korea, occupational health nurses have been working as health managers at the workplace and as part of a hospital based group occupational health service since 1991. The role of occupational health manager, required by law, includes providing preventive and primary care, safety management, and inspection of the work environment.
 - 2 Recently, occupational health nursing practice-based lecture has increased, and more emphasis has been placed on the process of occupational health nursing in both undergraduate and graduate programs.
 - 3 The Korean Association of Occupational Health Nurses and the Korean Academic Society of Occupational Health Nursing have been working to develop professional competence for occupational health nurses since 1991.
 - 4 Until the mid 1990s, occupational health nursing research focused primarily on role and job satisfaction of occupational health nurses. However, the number of research studies has dramatically increased and, gradually, survey studies have been replaced by studies with experimental design.
- Ministry of Health and Welfare. (2000a). *National health insurance law*. Seoul: Author.
- Ministry of Health and Welfare. (2000b). *Yearbook of health and welfare statistics*. Seoul: Author.
- Ministry of Labor. (1981). *Pneumoconiosis prevention act*. Seoul: Author.
- Ministry of Labor. (1990). *Industrial safety and health law*. Seoul: Author.
- Ministry of Labor. (1991). *Master plan for industrial injury prevention*. Seoul: Author.
- Ministry of Labor. (1999). *Industrial Accident Compensation Insurance Act*. Retrieved January 20, 2003, from http://www.molab.kr/English/law/sub_Content1.jsp
- Ministry of Labor. (2000a). *Results of health examination of workers in 1999*. Seoul: Author.
- Ministry of Labor. (2000b). *Yearbook of labor statistics*. Seoul: Author.
- Park, J., Kim, Y. (1998). The history of occupational health service in Korea. *Industrial Health*, 36, 393-401.
- Yoo, K.H. (1999). Nursing guide for occupational health nurses working in small-scale-enterprises. *Korean Journal of Occupational Health Nursing*, 8(1), 68-83.
- Yoon, S.Y. (1994). Development of occupational health nursing in Korea. *Journal of Korean Industrial Nurses Association*, 1(1), 15-23.