Legacy of Implementing Industrial Health and Safety in Developing Countries

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Abstract Aiming to develop public attention to the hindrance of national and international efforts on industrial health and safety, this paper explores some important issues, such as the reasons for the lack of motivation to implement necessary measures in developing countries. Examples are likewise given to show why working people are significantly exposed to a number of occupational problems that are reflected in a deterioration of their health, safety and well being. In lieu thereof, an introduction of health and safety is not itself a solution, if certain changes are not rationalised according to the local need. While health and safety intervention is concerned, then local need is of prime importance. If individual situation is not clearly outlined, then preventive and control measures can be treated as a de facto measure. Hence immediate attention, collaboration and co-operation is needed from all the concerned parties such as local government authorities, semi-government or private organisations and international communities for proper implementation of work regulations as well as industrial acts and rules in various workplaces in each of the developing countries. 

Keywords: epidemiology, industrial health, occupational hygiene, regulations, developing countries, public attention, collaboration and cooperation

Introduction

The developing nations have opportunities for a rapidly growing industry and national economy. However, rapid industrial development also increases industrial accidents and occupational diseases. Many of these countries have advanced in great strides with regard to rapid industrialisation and global free market opportunity, which called for the implementation of occupational health and safety as one of the most important issues. Industrial health and safety (IHS) can be defined as work-related health and safety, which usually focuses on the ways in which the workers should be protected from various work-exposures. Generally, the concept of IHS has been expanded to cover the prevention of work-related accidents, injuries and diseases, aiming for the recognition, evaluation and control of those problems, together with health promotion and enhancement of the general living environment of the industrial workers. Occupational problems have long been a part of the history of many countries (Ahasan, 2000a, b). The workers are exposed to different occupational hazards because a few government representatives or other concerned organisations have been adopted such a program on health and safety (Ahasan and Partanen, 2001; Ahasan and Lee, 2000). These problems are amenable to control by timely prevention of appropriate services integrated with primary health and safety program (Ahasan et al., 2000; Ahasan and Partanen, 2000a, b). In this regard, many studies have reported on certain legacy in implementing health and safety measures in different workplaces (Forget, 1992; Sekimpi, 1991; Mohan, 1987; Jeyaratnam, 1985; Phoon, 1983). There is a tremendous demand in the elimination of problems in various workplaces since individual countries are facing various obstacles (Mwaniki, 1992) in preparing a suitable portfolio on effective policy for sustainable development (Partanen et al. 1999). The recent economic downturn, political disturbances and environmental degradation in many nations may have influenced the limiting of the health care, safety services and workplace improvement. In many cases, workers’ health and safety are being aggravated due to congested space in the workplace and poor working conditions. Therefore, injury rates and accident severity are higher in these nations than the western and industrialised nations (Takala, 1999). It is also due to ignorance, illiteracy, economic constraints,
cultural characteristics and indifferent attitudes of the workers. The greedy entrepreneurs not always maintain safe work standards in many developing countries (DCs), and thus the workers are the victims of critical attitude of many of them. The national resource for environmental monitoring and health surveillance varies widely between nations (Partanen et al., 1999). However limited funds may be allocated in national budgets for IHS. It is thus obvious that workplace monitoring and workers’ periodic medical examinations are not carried out. On the contrary, physical and chemical exposure levels are high, and stressful working conditions prevailed in most of the regions. The workers continue to thrive in squalor with unrecognised illness. Many of them do have poor access to training and education. Factory inspectors, doctors, nurses, engineers and technicians may be employed by the state but these officials are not always trained and educated in occupational health, nor in industrial hygiene, or safety-related topics. These officials are often seen busy in their personal interests and not to the duties and responsibilities they are assigned to.

Appropriate evaluation and assessment of work disability in cases involving accidents and occupational diseases are difficult to arrange in many DCs. On the other hand, the globalisation of technology and with the opportunity of market economy, it introduces a new challenge for industrial development in many countries (Rantanen, 1997). Increasing export of second-hand machinery to the third world nations may deteriorate working conditions. It has been seen that hazardous materials are flowing to the third world from the western nations. As a result of rising social costs, especially of waste treatment and dumping of toxic materials, western-based corporations have difficulties in dumping hazardous materials in their own soil. Foreign companies find an ample opportunity to dump and export hazardous materials easily due to easy regulation in DCs. With the opportunity of economic reform, many of these nations need to open a variety of joint ventures with foreign capital, which also brings in a different corporate culture and experience without a fair commitment to the health and environmental protection. The government in most of the DCs invites international companies as it gives the workers especially those who work in the private sector industries or small and medium sized enterprises (SMEs) do not report actual problems (Loewenson, 1996; Mwaniki, 1992). Thus the actual number of affected workers may be much higher than believed. The work regulations on labour protection are not always fully applied in these industries. IHS is not sufficiently covered by the labour legislation in the majority of SMEs (<50 workers). On the other hand, it would be very expensive to implement work-regulation in these sectors because they lack money and bank loans. Therefore, it is presumable that problems persist in these industries. The vast majority of accidents occur in agriculture, for instance, because health and safety measures are not satisfactorily implemented. WHO (1990) has estimated the annual number of severe pesticide poisoning at 2 million intentional and 1 million unintentional poisoning, out of which 220,000 are fatal. Inspectorates are rarely operating their activities in agricultural settings. In the rural areas, health problems may be

Problems in the Agro-Based Rural Industries

The workers in agriculture and rural industries constitute the majority of the workforce in DCs. These industries are not able to invest money and resources in IHS. In general, farm owners lack sufficient knowledge and know how for the improvement of IHS. Agricultural workers themselves may not realise the importance of their individual health, and fail to participate in safety activities. The reason is that agro-based rural industries usually do not maintain close contact with the concerned organisation to receive advice and co-operation. Many of the workers especially those who work in the private sector industries or small and medium sized enterprises (SMEs) do not report actual problems (Loewenson, 1996; Mwaniki, 1992). Thus the actual number of affected workers may be much higher than believed. The work regulations on labour protection are not always fully applied in these industries. IHS is not sufficiently covered by the labour legislation in the majority of SMEs (<50 workers). On the other hand, it would be very expensive to implement work-regulation in these sectors because they lack money and bank loans. Therefore, it is presumable that problems persist in these industries. The vast majority of accidents occur in agriculture, for instance, because health and safety measures are not satisfactorily implemented. WHO (1990) has estimated the annual number of severe pesticide poisoning at 2 million intentional and 1 million unintentional poisoning, out of which 220,000 are fatal. Inspectorates are rarely operating their activities in agricultural settings. In the rural areas, health problems may be
significantly acute in DCs, because of lack of treatment facilities, or various local problems. There is usually no network provided at the provincial level or rural districts. Mwanthi and Kimani (1990) argued that occupational hygiene surveillance, epidemic control units, or local health centres have very little or no function to identify occupational diseases in many instances. There are centres equipped with laboratories in the cities but qualified staff to assess exposures and work environment may be few. Monitoring of work environment has revealed that hazards in Southeast Asia (Lee, 1998; Tu and Trung, 1998; Youngchaiyud and Nana, 1997) have increased significantly. Kogi and Sen (1987) have reviewed the importance of third world ergonomics, showing various work-related diseases in different areas. The entrepreneurs in SMEs may not be able to hire physicians, hygienist or safety engineers. In some countries, factories employing less than 300 workers can have a part-time plant physician and a safety engineer. Due to poor budgeting, the entrepreneurs can thus rely on this type of system instead of employing a full-time doctor and an engineer. Therefore, with the support of national budget however limited, the SMEs should include all of these basic services. The state and community must recognise the contribution of the work of the poor workers to the progress of the economic development in the developing nations.

**Work-Regulation and Labour Legislation**

The work regulation and labour legislation are one of the most comprehensive matters that have not been implemented so far because of many of those constraints mentioned above. In many DCs, these regulations are either old, or not up-to-date, nor revised recently that environmental and climatic problems are not regulated properly. Environmental controls are focused by other legislative documents, for instance, which may not include issues for improvement of working conditions. A variety of new regulations have been issued by the local government in a piecemeal fashion—with the context of rapid industrialisation, structural adjustment policy, or due to the pressure imposed from the international organisations. Labour Legislation in many of the Third World nations requires that enterprises using poisonous or hazardous substances must report to the inspection authority, and inform workers of risks and take appropriate precautionary measures. Unfortunately, fewer than 10% of the enterprises registered in China follow these procedures (Liang and Yang, 1996). LaDou and Jeyaratnam (1994) pointed out that the interaction between push factors that contribute to the transfer of hazardous materials and seconded handed machinery and pull factors that tend to attract hazardous materials and junk industries has been making the situation even worse. The inspectors in the rural districts and agro-based areas (Liang and Yang, 1996) are rarely involved in the implementation of labour legislation and thus work injuries have been ranked as one of the top problems in the third world (Table 1).

**Workers Attitude and Unsafe Practices**

In many countries, work practices performed by the local workers are difficult to understand in the context of the right way of doing things. Many of them are involved with unsafe acts (odd posture, physically stressful activities) even with prior knowledge of the risks of occupational exposures. Cleaning, servicing, maintenance, and inspection of ventilation systems are hardly implemented—even though they are very important. Due to perhaps flexible attitudes of the management and workers, personal protective devices are not in use commonly. This can be due to non-suitability of use of personal protective devices, or because of the hot and humid climates. Unless the employers and workers agree to obey and respect the basic requirement of health and safety, existing work-related regulations will hardly be implemented. It is also common knowledge that new entrepreneurs, and private sector industries do not have the competence for, nor willingness to learn national law or regulations. Their personal involve may be too commercialised i.e., earning money in a short time, that they may not be willing to fulfill the minimum standard of working conditions for the shake of workers affected or occupationally exposed to various risks. In many cases, both the workers and entrepreneurs do not even understand what is meant by “standards”. The factory owners usually enter the business with the motive of making money and busy with

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<th>Regions</th>
<th>Workers employed (WE), million</th>
<th>Fatalities (F· WE)</th>
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<tr>
<td>Some Asian nations</td>
<td>339,840</td>
<td>80,586</td>
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<td>Middle Eastern countries</td>
<td>186,000</td>
<td>41,850</td>
<td>22.5</td>
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<td>Sub-Saharan Africa</td>
<td>218,400</td>
<td>45,864</td>
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<td>Latin America and the Caribbean</td>
<td>195,000</td>
<td>26,374</td>
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<td>China</td>
<td>614,690</td>
<td>68,231</td>
<td>11.1</td>
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<td>India</td>
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profit calculations. Most of the entrepreneurs are not willing to register their new factories at the appropriate offices, and thus, it is difficult to enforce “Regulatory Acts” or “Factory Rules”. Inspectors may have limited resources for a brief workplace inspection. Health managers, physicians, nurses or hygienists may have a private business or a clinic elsewhere. They could feel uneasy or stressful to check infections or occupational health among poor working populations. Based on the “Employee Service Rules” and “Employment Regulations”, for instance, a few Inspectorates work honestly. The concerned officials may not contribute to the development of health and safety practice because the inspectors are not usually present in their offices regularly. Their individual duties are not clearly outlined especially in rural districts.

**Poverty and Unemployment**

Although it is often said that a healthy worker is an investment, there is usually a missing link in this true statement by way of hard evidence. The organisation responsible for appropriate measures has very limited money, human resources, vehicles and equipment. Thus, the implementation of proper action is lacking. In most of these nations, very little of the national budget is spent on IHS-measures. In the national budget, IHS is not clearly in the list of items budgeted for, due to tremendous population growth, unemployment and inflation. UNDP (1996) reported that many people find themselves in acute poverty—while people work in risky workplaces where injuries and accident probability is high (Takala, 2000). Many workers only hold on to the jobs that keep them alive irrespective of hazards involved in their workplace. A poor worker receives a poor education and a low salary that leads to poor nutrition, which adversely affects their health/safety attitudes in their workplace. And thus, wretchedness is the attribute of poor workers living in such a pitiful circumstance. The workmen’s compensation scheme has not even been enacted in many nations, and hence workers are not entitled to the benefit of regular health and safety services. The workers employed in the state owned industries are not even paid a monthly premium for health insurance. Most of these workers have little or no money to buy medicines and sufficient food. Money scarcity, further, can erode their basic living style and socio-economic standards, just for survival. This situation perhaps may undermine their access to other social, cultural, economic and welfare activities. In the context of trade union activities and unfair treatment to safe industrial work, workers are perhaps kept from the legal right to safe industrial work in a health environment. In many cases, trade unions are not informed and fully involved in matters for the workplace development. Many industrial workers who become ill and are injured due to their work do not have their impaired health or injury recognised as work-related; instead they lose their jobs without being awarded any compensation. An injured worker is not only rarely rehabilitated but also forced into unemployment. In due crisis, they may be denied the right to adequate information, thereby making it difficult to protect their workers and members, or to refuse doing dangerous and strenuous work practices.

**Non-Recording of Data and Information**

Data and information regarding IHS are yet to be systematically compiled in many countries. In many cases, workers usually do not complain about difficult circumstances because of the fear of losing jobs (Ahasan et al., 1999). Due to lack of information on occupational diseases, the causes of work-related problems are not always generally known. IHS-related data and information is very important since reporting verified occupational diseases, work-accidents, surveillance data or occupational exposure data stimulate feedback on prevention and control. The database are still manual in many countries such as Africa (Lewis, 2001, Sekimpi, 1991), Asia (Chen et al., 1996; Mohan, 1997, Ahasan, 1994) and the Latin America (Valcarcel-Lopez, 2001). The data also do not usually reach the targets for correct analysis of IHS that can be helpful to compare with other countries in the Third World nations. Even the concerned Ministry does not necessarily reach the work-related information since data collection and compilation is yet to be started using computers. Records on occupational diseases, work-accident or fatal injuries are rarely maintained, even in cases where demand for injury/accident compensation in the “Labour Court” is called for. Information available in the concerned offices only relies on the reported cases. A nation-wide network is therefore needed to provide technical, organisational and legislative support to create pertinent registers. It will help to increase public awareness to launch for a campaign on IHS (Singer and Endreny, 1987). However the reports and circulation on epidemiological data and information can be a matter of controversy (Warternberg and Greenberg, 1992). In many cases, the circulation of claims involves the cultural politics of the environmental change (Burgess and Harrison, 1994). The focus of global activities of the WHO/ILO’s network of collaborating centres in IHS is heavily concentrated in Europe and North America. Now, it has to be set-up in DCs with enough resources. The focus on IHS (Fig. 1) would have to be in the favour of the workers and entrepreneurs since health surveillance and safety services usually have not been launched, in many of the industrial enterprises. In many instances, the foreign enterprises bring in more problems. An investigation in China (Liang and Yang,
hasan, R 1996) showed that 62.8% multinational enterprises were defined as an industry with hazardous materials or production processes. Another survey in China (Chen et al., 1996) showed that occupational exposure levels were higher than the national limit. As a result, acute and chronic poisonings had occurred among workers in DCs. Joint venture companies also produce and utilise a number of toxic pesticides (Wesseling et al., 1997). The Union Carbide poisonous leakage that killed thousands of Indians is a well-known example (Vardarajan et al., 1985). A number of serious diseases caused by the hazardous substances from the foreign firms are spreading to the developing nations’ every year. In this context, many of us wonder upon is the role of economic institutions (e.g. World Bank, Asian Development Bank, African Development Bank, IMF) and international policy (e.g., Kyoto Agreement) on occupational and environmental health.

Lack of Collaboration and Co-Operation

Lack of collaboration and co-operation are present due to bureaucratic corruption that exists in the upper level administration. There are evidences that concerned officials are not fully co-operative with the international organisation. It is also common knowledge that due to a mismatch between workers’ characteristics and labour legislation, or due to flexible attitude of the factory owners, work regulations (e.g., standards, threshold limit values, exposure limit values) are rarely followed. Realistic guidelines should therefore match with the local characteristics of the workers, physiology and mental capacity, labour union’s attitudes, and employer’s financial capacity. In any case, regulatory issues such as work regulations are vital in preventing hazardous materials, toxic substances and/or non-adjusted technology. Otherwise health, safety and ergonomics application in DCs will never be implemented due to other pressure in the economy. However, in preventing hazardous materials, toxic substances and non-adjusted technology, international organisations (e.g., ILO, WHO, UNDP, UNEP) and NGOs (Oxfam, CARE, JAICA) and other regional aid agency (CIDA, DANIDA, FINNIDA) should work together with the government authorities in order to improve the co-operation and minimise the social costs of health and safety.

In spite of the commendable responsibility of the international organisation, occupational safety or industrial health programs may not be successful due to political unrest, labour dispute and unfavourable socio-economical circumstances of these nations. The actual success of international agencies (Takala, 1999a) will depend on the effective role of their policy not being biased by the bureaucracy or politics of the local governments. Indeed, if political and social unrest continues, the actual development of working conditions will be far behind, despite the promise of help from the international donors and non-governmental organisations (NGOs). If there is lack of international collaboration, then local support services will not be geared-up in inspection, consultation, training and expert services. The focus on global activities of WHO/ILO network of collaborating centres in IHS is heavily concentrated in Europe and North America. Now, it has to be set-up in DCs with enough resources because control and preventive measures are still neglected in these regions. The focus on IHS (Fig. 1) would have to be in the favour of the poor workers in DCs and, the entrepreneurs who lack money, expert personnel and other resources. To minimise the social costs of IHS, an international effort should therefore be launched immediately so that control measures are implemented in the workplace, in time and in practice. International organisations, research institutes, and NGOs should work together with the government authorities in order to improve co-operation and collaboration. Educational institutes such as Universities, schools, colleges and training centres should launch programs on IHS. Community leaders are to be invited to share and stimulate their contribution to solve work-related problems.

Policy and Planning

Effective national policies and programs are seldom implemented in many countries due to the inadequate
resource facilities and lack of opportunity to conduct research and studies on work-exposure. In fact, this situation is in effect so for a long time due to various socio-economic, political and cultural factors. The policy structures, planning and activities of state services are to be developed for identification, evaluation, prevention and control of hazards. Policy application is to be implemented in all the workers, even for small and medium sized industries, informal sector, and agricultural industries. If improvements are made only to increase production, then health hazards may remain untouched. Therefore, policy makers and employers need to ensure that provision of a safe and healthy work-environment is a key consideration in all the investment and production decisions that the workers and managers are involved in. The personnel employed by the state seldom visit factories and establishments. The concerned office has a shortage of manpower, vehicle, equipment or budget. In some countries factory inspectors who work under the Ministry of Labour blame the public health officials who work under the Ministry Health, for instance. Work-related issues are perhaps comprised under other Ministries who have different rules on the control and implementation policy. But both of these groups may be blamed for administrative gap or lack of communication that may have negative effects to implement regulatory matters. If a medical doctor investigates the causes of mechanical accidents, and an engineer prepares health reports, then real improvement will never be expected. In many countries, the administrative system of accident prevention and control is usually independent from the system responsible for occupational health. Owing to the poor implementation of labour legislation and work-related regulations, and other local constraints in preventing occupational health and safety problems, the major focus should be concentrated on practical solutions to actual needs and local practice as these are to be implemented soon. It is therefore imperative that the concept of integrating occupational health, work safety and industrial hygiene becomes an approach that can be applied widely.

Training, Seminar and Symposium

The training programs organised by various parties may not be successful due to lack of implementation and poor planning programs. The training centres are usually situated in the cities, and thus, inaccessible by the rural participants who are in real danger at their workplace (agro-industry, small scale or cottage industries). The teaching curricula have not been developed so far as to meet the needs of on-the-job training. Training on industrial hygiene or occupational health is not frequently offered in short-term courses that touch on a variety of topics. But, these subjects such as occupational epidemiology, health management, chemical safety and regulatory issues or industrial toxicology are the most important subjects for workplace improvement. In many cases, training sessions are arranged by the international organisations (ILO, 1988a), but lecturers who are invited from a technical university or a medical college, perhaps prepare handouts from a theoretical text-book and supply photocopies that are not helpful for workers at risks. Specialised training, higher education and research on various topics of IHS is not yet fully developed at national level. If training programmes are organised for institutional development, then usually top-level managers and supervisors from the big industries and state owned enterprises are the participants who may not pass the practical knowledge to the general workers. Training curricula for the vast majority of unskilled and less educated workers have been neglected so far. Both the workers and factory owners require occupational training and education before they can grasp the idea of improving working conditions. Job training on safe work practice, mobile safety-shows or short courses taken together are not the answers to all work-related problems that may help industrial workers in each of the developing nations. Through job training with local practice, control of working conditions would be easier. Appropriate, effective and in-time surveillance (Yranheikki and Savolainen, 2000) is a prime necessary for the improvement of existing situations. However these can vary substantially between different countries and are strongly associated with the local tradition (Kogi, 1997). By any means, local initiative and with the cooperation of international organisation, basic labour welfare facilities should be provided. From surveys on risks (Partanen, 1996), work improvement is sought. Thus, the authors would like to express concern with criticisms-why there is a lack of initiative towards implementation of effective measures in DCs. Rantanen (1997) and Ahasan (2000a,b) emphasised that job training and skill development programs should be launched for giving basic knowledge to both the workers and managers that may surely contribute much to the improvement of working conditions.

Research and Education

Work-related research on occupational medicine, industrial hygiene or industrial toxicology and its results are not easily accessible to local experts or concerned officials. Factory inspectors, for instance, may not get the opportunity for specialised training due to poor economy, bureaucratic and administrative formalities. Training institutes in the district level are few and thus opportunities for epidemiological studies, for instance, are difficult to arrange for junior level officers. Inspectorates in the divisional level also have very little
co-operation with universities. A few researchers are able to permit to participate in international conferences or symposiums that share up-to-date knowledge and methods. However, workshop presentations on the facts and findings from the western nations may not reflect a common interest on the protection of the workers in the Third World. In many cases, international congresses include special sessions by the name of so-called “industrially developing nations” however, theoretical conceptions may not help to improve workplace safety or occupational health in DCs. For the benefit of participants from both the east and west, the scenario of arranging such conferences is attractive and has already demonstrated its merits in a few instances.

Discussion and Conclusion

Workers in DCs represent a large proportion of the global workforce but receive insufficient attention for workplace improvement. Efficient steps to tackle the work-related problems are necessary because health and safety issues are not systematically targeted in the national agendas. The local governments of each of these countries have not been paying ample attention to economy and appropriate strategies are often lacking. Emergency health/safety services have not been set up in the majority of the industries, even state-owned or public enterprises in many nations no matter whether implementation of workplace regulations is a global issue of urgent attention. Proper measures to suit the local conditions are undertaken by active participation of workers, planning and control of jobs and tasks. Job training and skill development programs are necessary and will enhance the recognition and appreciation of appropriate measures. An in-plant service system is in some aspects better than a centralised system, for instance, that may help to provide environmental monitoring, and health/safety surveillance. Especially, low-cost measures need to be emphasised so that industrial entrepreneurs can afford the cost of change. Duties and functions of the inspectors should be specified for implementing standards, such as threshold limit values, recommendations, regulations or legislation. The workers must be encouraged to report all types of occupational problems so that immediate action could be taken. Control measures could be launched for case by case basis. Inspectors should be active and innovative to minimise local problems. IHS services need to include both preventive and curative services, possibly also to workers’ families. Industrial hygiene is needed for the monitoring of work environment. Ergonomics, on the other hand, is important for the workplace design. Effective collaboration between experts, workers and management is vital for hazard assessment and implementation of IHS. Through continuous training and education, safety and health consciousness is to be understood among the workers, entrepreneurs and others. We need to upgrade and to develop the curricula of training programs to suit local situation. To produce teaching materials, professionals should be practicable, following low-costs and sustainable examples. Qualitative research may be needed to integrate work, health and safety. Education and training of the concerned personnel should be planned to meet the requirements of their job. In order to prevent occupational problems, “Standards”, “Legislation” and “Industrial Acts” and “Factory Rules” are to be upgraded and implemented. The national policies, programs and regulations need to be further enforced strictly through implementation of the work regulations. “Labour Laws” are to be recognised as fundamental legislation so that it favours the workers. Work injuries may substantially be reduced through the initiative of the factory management and the enforcement of work regulations, which should be periodically implemented through on-site visits in various workplaces by regular inspections. Periodical examinations should be applied in dangerous jobs. A high priority must be placed on the national agenda. International collaboration is to be called for in order to meet these challenges in reality. To meet broader needs especially for distant learning, televised courses are to be broadcast regularly. Proper implementations of practical tools are to be given priority in development, and thus, trained health and safety personnel are needed to show the way of doing things better.

Industrial health, work safety and occupational, independently or collectively is an essential component of industrial economy, national and social progress. The practical concern of this approach is to improve the design of workstation, layout and worker’s safety with machinery because problems may be subjected to medical, technical and social analyses. These are some of the important matters of growing social concern, which is related to production economy and environmental protection. WHO’s commitment on ‘Occupational Health for All’ will never be achieved unless international organisations and NGOs called for an immediate action. Therefore, measures taken to eliminate occupational problems are to be specified on various aspects, such as development of guidelines, occupational health planning, drafting and revising of disease prevention and safety campaigns, supplementing of work regulations, training and education on health promotion, assessment, supervision, and monitoring. It is important to identify the work-tasks with the highest risks, and the concomitant interventions for IHS. Effective measures should be able identify early signs of chronic overload, diseases, exhaustion and injury. Inspection, research, information dissemination, training and available services-all have to be efficiently organised.
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