

GLOBALIZATION OF OCCUPATIONAL HEALTH: CHINA'S DEVELOPMENT AND REFORM

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RESUMEN

La mayor parte de la población del mundo (el 58 %) pasa un tercio de su vida adulta en el trabajo. El ambiente de trabajo puede tener un impacto positivo o negativo sobre la salud y el bienestar. Los accidentes laborales, los riesgos ergonómicos y psicosociales, pueden y deben ser prevenidos. Este tipo de acciones son necesarias a un nivel internacional, regional, nacional y empresarial. Este artículo se focaliza en el desarrollo de la Salud Laboral en la República Popular China y en algunas cuestiones sobre si la globalización acelera y mejora este proceso. El objetivo de este artículo no es capturar todos los aspectos relevantes de la salud laboral a niveles técnicos, médicos y psicológicos, se centra más en proporcionar una descripción sobre la historia y la panorámica de la situación actual de la salud laboral en la República Popular China, en comparación con la situación de la salud laboral en regiones totalmente desarrolladas (p. Ej. Europa) y con la situación global, respectivamente.

PALABRAS CLAVES

Salud Laboral, China, Estrés Laboral, Ergonomía.

ABSTRACT

Most of the world's population (58%) spend one-third of their adult life at work. The work environment may have either a positive or hazardous impact on health and well-being. Work-related accidents and ill-health can and indeed must be prevented and that action is needed at international, regional, national and enterprise levels. This paper focuses on the development of occupational health in the People's Republic of China and questions if globalization accelerates and improves this process. It is not intended to capture all relevant aspects like technical, medical and psychological details of occupational health but to provide an overview about the history and a snap-shot of the current health situation in the People's Republic of China and to contrast it to occupational health in fully developed regions (i.e. European Region) and to the global situation respectively.

KEY WORDS

Occupational Health, China, Occupational Stress, Ergonomic.

OCCUPATIONAL HEALTH IN THE PEOPLE'S REPUBLIC OF CHINA

Occupational health started to develop in the early 1950s soon after the founding of the People's Republic of China. To meet the needs of industrialization, occupational services in the 1950-1960 consisted of curative occupational medicine and work-related diseases, industrial hygiene for work environmental monitoring and assessment of control engineering, and industrial toxicology assaying for chemical toxicity. This period marked the origin of specialized occupational health services in a modern sense.

By the late 1970s, following economic reform and policy of opening the country, the structures and activities of occupational health were further developed. Gradually, modern occupational health has developed to cover not only the prevention of traditional occupational diseases and work-related disorders with the help of occupational hygiene, occupational medicine, and industrial toxicology, but also the ergonomic aspects of the work environment and the work organization, psychological stress at work as well as the primary health care for general health problems (1).

In the past 25 years, China has made considerable progress in improving its overall living standards and the quality of working life. Total health expenditure per capita was up from US\$ 9.4 in 1981 and US\$ 13.6 in 1990, to US\$ 50.5 in 2001, and life expectancy has increased from 57 years in 1957 to 71 years in 2003.

With a total population of 1.31 billion, approximately 733 million are in the active workforce, most of them are blue-collar workers and a large proportion of which is exposed to potentially occupational hazards. The emerging issues are over-time work-days and 'over-dose' exposure to dusts, chemicals, and other occupational hazards, and psychological stress at work as well as ergonomic problems. A large number of active labor-force is engaged in construction, mining, and other occupations with potential exposure to hazardous substances. The 10 leading occupational diseases can be seen in Table 1.

The highest occurrence of lung disease (pneumoconiosis) was found to be in the coal-mining industries, and accounting for 52.7% of the total cases. It was estimated that, besides the human suffering, the economic burden of this disease, including direct and indirect costs, reached 25 billion Yuan, representing 0.4% of the total GDP (6000 billion in 1999).

Table 1

Ten leading occupational health diseases in China

1	Occupational lung diseases
2	Metal poisoning
3	Pesticide poisoning
4	Organic solvent and aromatic amine poisonings
5	Irritant and asphyxiant poisonings
6	Occupational dermatitis and chemical burns
7	Noise-induced hearing loss
8	Vibration disease
9	Arc-welder's eye-flash
10	Occupational cancers

Another major disease is the acute occupational poisoning. In 2002, official statistics listed 205 acute work-related chemical accidents involving 590 intoxicated patients. 112 of the 205 cases died from acute poisonings. The number of confined space incidents has risen up, presumably because of improved reporting and increased awareness of these accidents after having the new Occupational Diseases Prevention and Control Act adopted since 1 May 2002. However, like many other occupational diseases, acute poisoning, associated with confined space, remains grossly under-reported.

To meet the national and global labor market demand, the Chinese population is undergoing a rapid social and technological change. Culture is often considered to be the overall set of beliefs, values, and behaviors associated with a given society. Regardless of how culture is defined or characterized, there are clear and unmistakable psychological impacts on both individuals and organizations when they interact and fully engage a culture different than their own.

In a rapidly developing country like China, economic development across various regional geographies may become unbalanced and induce the domestic migration of workers. During this stunning transition period, many workers in poorly performing economic areas are migrating to more developed areas, such as movement from west to east China or from north to south China. Often these individuals were agricultural workers who are quiet susceptible to migration related stress. For example, during recent peak construction periods in Shanghai, there have been approximately four million construction workers (out of a total population of 16 million) many of whom came from rural areas outside the city. Many of these workers must deal with differences in language, customs, and long separations from family and friends, and under-served

situation of health care, housing, and children education, which may result in a stressful constraint (2).

The overall situation of work safety turned to a relatively stable tendency in recent years. The number of accidents and fatalities in accidents with more than ten deaths were decreased 10% in 2002 versus 2001. However, work-related accidents and injuries have still been acknowledged as serious problems. Total deaths in fatal injuries were over 140,000 in 2002, a 7% increase versus 2001. Three hundred and eighty people were killed by accidents everyday, of which 78.6% were attributed to road traffic accidents, and 10% occurred in industrial and mining enterprises. Township- and village-owned enterprises (TVEs) remain the crux of work safety. The number of accidents and the death toll in TVEs accounted for 70% of the total in 2002. At least 60% of the fatal and severe accidents were associated with unsafe work practice and lack of safety awareness (Table 2) (3).

Table 2

Causes of fatal and severe accidents

Causes	Number of accidents	%
Unsafe work practice	186	57.8
Deficit of facilities	47	14.6
Lack of protecting guard	33	10.2
Inadequate inspection	28	8.7
Lack of awareness	10	3.1
Poor environment	4	1.2
Lack of PPE	3	0.9
Others	11	3.3
Total	322	100.0

The new Work Safety Law of the People's Republic of China was adopted by the 9th National People's Congress on 29th June 2002, and went into effect on 1st November 2002. The act reiterated the workers' rights of 'right to know' (being empowered by education and training), 'right to participate' (being involved in the work safety issues), and 'right to refuse' (being self-protected from risk by refusing to work under unsafe conditions). These trends make it possible to respond to the work safety issue under a law- and human behavior-based requirement.

The Occupational Diseases Prevention and Control Act of the People's Republic of China (ODPS-Act) is the first comprehensive law on occupational health adopted at the national level (Occupational Diseases Prevention and Control Act, 2001). It was

approved by the Standing Committee of the National People's Congress in 2001 and brought into effect on 1 May 2002. Similar to the impact that the 1970 Occupational Safety and Health Act (OSH-Act) had on occupational health and safety issues in the USA, the ODPC-Act is expected to improve occupational health in China (1).

Is the People's Republic of China converging towards the global goal of occupational health?

According to the principles of the United Nations, WHO and ILO, every citizen of the world has a right to healthy and safe work and to a work environment that enables him or her to live a socially and economically productive life.

Particularly in developing countries like the People's Republic of China, the health and well-being of the family is critically dependent on the health and productivity of its working member. In a situation where organized social protection is lacking, the loss of health, life or working capacity of such a key member of the family often means a severe crisis also for the rest of the family.

The rapid change in the People's Republic of China towards a modern working life is associated with increasing demands of learning new skills, the need to adapt to new types of work, pressure of higher productivity and quality of work, time pressure and hectic jobs and growing psychological workload and stress among the workforce.

The industrialized countries are moving to the so-called post-industrialized stage, characterized by a low proportion (2.5-5%) of employment in agriculture, no more than one-third in industry and the rest in services. According to the World Development Report 2005, in the People's Republic of China, industry and construction accounted in the year 2003 for 53% of GDP, services for 32% and agriculture for 15% (4).

It has been shown that a high standard of occupational health and safety correlates positively with the GNP per capita in all groups of countries - developing, newly industrialized and industrialized. The GNP per capita in the People's Republic of China was US\$ 1.100 in 2003 compared to US\$ 12.450 in the European Region (Table 5). Obviously there is a big gap between the two figures which leads to the assumption that the standard of occupational health and safety in the People's Republic of China is still low. But we have to see as well other indicators like

the annual GDP growth rate, which was and is around 9% since the start of the reform and opening up in 1978 and is expected to grow further. This figure shows a more optimistic situation for the future development. The total expenditure on health was

5.8% of GDP or 10% of total government expenditure in the year 2002. This is less than in the European Region but in concert with the massive GDP growth rate a clear signal for a rising standard of occupational health and safety.

Table 3
Selected Socioeconomic indicators for the People's Republic of China and the European Region

Indicator	People's Republic of China	European Region
GNP per capita (current US\$)	1.100	12.450
Per capita total expenditure on health (international dollars)	261	1.331
Total expenditure on health (% of GDP)	5.8	7.4
General government expenditure on health (% of total government expenditure)	10.0	12.0

'Total health expenditure' is the sum of general government expenditure on health and private expenditure on health in a given year (in international dollars).

'General government expenditure' includes consolidated direct outlays and indirect outlays, including capital of all levels of government. Social security institutions, autonomous bodies, and other extra-budgetary funds.

'International dollars' are derived by dividing local currency units by an estimate of their Purchasing Power Parity (PPP) compared to US dollar, i.e. a measure that minimizes the consequences of differences in price levels existing between countries.

There is a growing body of data showing that most accidents are preventable and that relatively simple measures in the work environment, working practices, safety systems and in behavioral and management practices are able to reduce accident rates even in high risk industries by 50% or more in a relatively short period of time. On the other hand, ignorance of such precautions, particularly in sectors where production has grown rapidly, has led to increasing rates of occupational accidents.

The ILO estimates that there are about 268 million occupational accidental injuries and more than 351.000 occupational fatalities a year worldwide (Table 4). This means an average risk of accidents is 94 per 1000 workers with the risk of fatality at 12.38 per 100000 workers. The average risks in established market economies are 29 per 1000 workers for accidents and 3.78 per 100000 for fatalities. In the People's Republic of China the estimated risk for accidents is 93 per 1000 workers with a risk of fatality at 12.19 per 100000 workers.

Table 4
Estimated numbers of work -related fatal and non -fatal accidents world -wide

Region	Economically active population	Estimated fatal accidents (ILO)	Fatal accidents reported to the ILO	Estimated accidents, 3 days	All accidents reported to the ILO
EME	419.732.002	15.879	14.316	12.118.393	7.527.083
CHN	740.703.800	90.295	12.736	68.909.715	61.329
World	2.836.897.404	351.251	41.748	268.059.671	9.031.431

Key: EME - Established Market Economies; CHN - China

'Estimated accidents, 3 days' means non fatal accidents which result in absences from work for more than 3 days

Estimation of occupational disease rates is difficult because of the shortage of data and variation in the definition of an occupational disease in different countries. Extrapolation on the basis of incidence in the well-registered European countries (3-5 per 1000) gives a world annual incidence of 68-157 million cases of occupational diseases, of which about 30-40% may lead to chronic disease and about 10% to permanent work disability and according to a crude estimate, about 0.5-1% to death. Many cases of occupational disease, however, go underdiagnosed and underreported and preventive actions are not undertaken.

The occupational health needs in the People's Republic of China relate to hazards such as occupational accidents, occupational diseases caused by mineral and organic dusts, chemicals, toxic metals and solvents, physical factors such as noise and vibration and biological factors such as viruses and bacterial infections. The prevention and control of such hazards has been successful in the fully developed countries and thus models for risk management are available. The problem is the low coverage of the occupational health and safety infrastructures.

Up to half of all workers in industrialized countries judge their work to be 'mentally heavy'. Psychological stress caused by time pressure and hectic work has become more prevalent during the past decade. The results of the study generally support that total stressors was positively related to physical and psychological strains (5). In other study, occupational stressors, in particular stress from safety, physical environment, and ergonomics, were important predictors of musculoskeletal pain (6). Other work factors that may have adverse psychological effects include heavy responsibility for human or economic concerns, monotonous work or that which requires constant concentration, shift-work, work under the threat of violence as, for example, police or prison work, isolated work, psychological stress and overload have been associated with sleep disturbances, burn-out syndromes and depression. In many industrial and service occupations, including health services, irregular working hours and frequent shift-work are associated with several physiological and psychosocial problems that affect the health of workers and require exceptional capacity for adaptation.

Strategies to prevent adverse psychological factors are directed towards the elimination of psychological overload and stress by modification of the work environment, work organization and, if necessary, by changing managerial systems. Prevention

and control includes organization of teamwork, training and education, introduction of stress management methods for individuals at risk and psychological support from foremen, coworkers and psychologically competent occupational health services.

Unemployment has been found to be associated with health hazards related to economic difficulties, major social problems, unfavorable lifestyles, risk behavior and psychological problems as well as, in some instances, higher mortality.

CONCLUSION

The new ODPC-Act signifies the Chinese government's commitment to improve the workplace environment and to eradicate preventable occupational diseases. However, the effectiveness of the new regulations will depend not only on implementation but also on communication and education risks prevention. The emerging challenge will be to get the new law to the small makeshifts or crudely converted workshops in villages and small towns in rural areas by a long-term perspective of communication, education and supervision.

Internal and international migration of the Chinese labor force is expected to grow during the next decade for several reasons. Rural populations are migrating to urban areas to seek employment and a higher standard of living. Such migration will cause several employment, housing, social, and health problems in the urban and suburban areas not only of the People's Republic of China but also at global level.

In spite of the progress made in human development which gradually let the world becoming a more equal place in terms of certain social indicators like longevity or educational attainment, there is a widening economic inequality between countries and even a widening of economic inequality within countries. The latter process takes presently place in the Peoples Republic of China. Along with such development, working condition and occupational health and safety standards are at risk of becoming polarized.

The awareness of the Chinese government, the authorities, employers, workers and the general public of occupational health and safety issues should be increased by using various ways to disseminate information and at global level more collaboration in issues of occupational health is needed between UN organizations like World Health Orga-

nization (WHO), International Labour Organization (ILO), the World Bank and nongovernmental organizations such as International Commission on Occupational Health (ICOH).

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