

IS OCCUPATIONAL HEALTH POSSIBLE IN DEVELOPING COUNTRIES?

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ABSTRACT

A brief survey of a number of factors that influence the possibilities for occupational health in developing countries is presented. The factors were considered according to their respective origin: the reasons and attitudes of workers, employers and the government.

For each of these groups the following set of problems were considered. For workers: education, social security, trade-union practices, demography and hygienic and safety conditions at work; for employers: their need for occupational health as an administrative, technical and social instrument which should help them to fulfill their objectives, their functions, their rights and their obligations; for the government: first, the problem of co-ordinating the contradictory interests of workers and employers within its own development policy, second, the features that characterize developing countries as regards occupational health, and third, the two principal orientations followed by governments in the organization of occupational health – the non-integrated system and the integrated system.

As regards workers, who need a minimum wage at least for survival, occupational health may help them to get and to keep their jobs. Workers are less interested in the benefits of occupational health as a system of improving hygienic and security conditions of work. Many times the result of this improvement is paradoxical, i.e. a reduction of their wages. In other words the present laws regarding improved conditions of work may have the paradoxical effect of making wages go down. For the employers who invest money in the hope of profits and accept the risks, occupational health is devised to diminish absenteeism, social conflicts and legal troubles. Moreover occupational health is a real asset for the respective company's technical and administrative maintenance level. The government has to strike a balance between the two sides by means of laws and regulations in order to ensure the best possible social life. In its respective efforts it puts special emphasis on its own philosophy of social and economic development.

In trying to improve general health and occupational health the government can choose between two basic models. The first is an open system for general health including a number of subsystems with more or less clearly delineated areas of influence. The second is an integrated system with occupational health directly or indirectly integrated with it.

The paper considers two main theses: The first model turns occupational health into "company medicine" despite of efforts of companies to play a part in social improvement. Limiting factors and conditions are considered. The second model fits best Recommendation 112 taken in a long-term sense.

It sounds rather unusual to say that occupational health may have a boomerang effect on the protective shell it is designed to provide³. However, in developing countries, because of a weak and distorted health system,

occupational health may actually become ineffective and insignificant, perhaps even annoying and troublesome.

This may seem strange, surprising, even disagreeable to think of. However, for this there are reasons, historical and social some of which we shall now point out. Medicine is as old as humanity, although initially it was an intuitive, spontaneous and pragmatic response to health damages. Work has also developed along with man who otherwise would not have been able to go through the stages which made him what he is today. But, until Ramazzini, health and work were almost strangers to each other. Subsequent industrial and social development accelerated the process of mutual identification and conjunction. Nevertheless and for a great number of reasons, the human being still works only in order to cover his necessities of life. That is to say: life and work cannot be identified with each other. Thus it is hardly surprising that, whatever concerns health at work, is not naturally integrated in health as a daily fact of life. If man has two parallel health situations, it is logical that general medicine and occupational health will not go together although their relationship is steadily growing and bearing fruit.

How does this lack of identification show in practice? For example: general medicine depends on the Ministry of Public Health, while occupational health depends on the Ministry of Labour, and each of them follows its own set of rules.

There is another important factor: in developing countries general medicine generally has a very weak situation. It faces great difficulties in solving problems presented by the health of the population as a whole. How could it then incorporate the problems arising at work into almost one half of the population? Especially since these problems are connected with productive mechanism of society which ensures socio-economic welfare. Therefore, whatever international and national objectives may be set for occupational health, the daily reality may make it more concerned with a good functioning of the productive mechanism than with the health of a considerable part of the population.

The earlier discussed weakness of the general health system and its separation from occupational health causes the latter to lose part of its efficiency and meaning by being locked within itself. When the problems it deals with involve the health of the community in general, it may happen that it reveals certain defects in the social orientation and structure of the community. Occupational health does not solve the worker's health problems, except strictly as far as aptitude for work is concerned (Tables 1 and 2). If the aptitude is correctly defined, health becomes dependent on the organization of work and on the conditions under which it is performed. The organization is of a technical-administrative character; the conditions, save the economic and legal conditions, are the province of hygiene and safety. The organization may be modified by the parties responsible for production, maintenance and marketing, since they are greatly influenced by market conditions, company plans and available technology. Hygiene and safety, on the other hand, depend on many factors of which we shall point out installations, equipment and processes (Table 3).

TABLE 1
Health and occupational health.

Level of prevention	Problems	Actions	
		General health	Occupational health
Health promotion	Nutrition	Food	
	Life conditions	Housing Education Economic level Recreation	
	Social integration	Family Political activities Cultural activities Other activities	
	Inheritance	Genetics	
	Preventive health care	Health examination Health education	Pre-occupational examination
Health protection	Infections Parasitosis Environmental contamination Stress	Immunization Hygiene Epidemiology Health education Social and mental hygiene	Immunization Hygiene Epidemiology Health education Social and mental hygiene
	Drugs	Control of abnormal use	Control of alcohol and tobacco
	Accidents	Safety	Safety
	Diseases	Early diagnosis and treatment Epidemiological vigilance	Change of work Early diagnosis and treatment Epidemiological vigilance
Social recuperation	Invalidity Non adaptation	Rehabilitation Re-adaptation	Rehabilitation Re-adaptation

Occupational health shows the effect of occupation on health, but it cannot change either the market, or technology and processes. It undertakes studies, gives advice and makes recommendations.

In the conditions due to the reasons we have just described, the very function to be fulfilled by occupational health is actually a question. We could present the problem in a different way by asking: What for and to what extent do those who make use of occupational health really need it? In everybody's mind production is a matter of great relevance. Those who use occupational health are aware of it, since one of its objectives is to increase work productivity. After all,

TABLE 2
Workers and welfare.

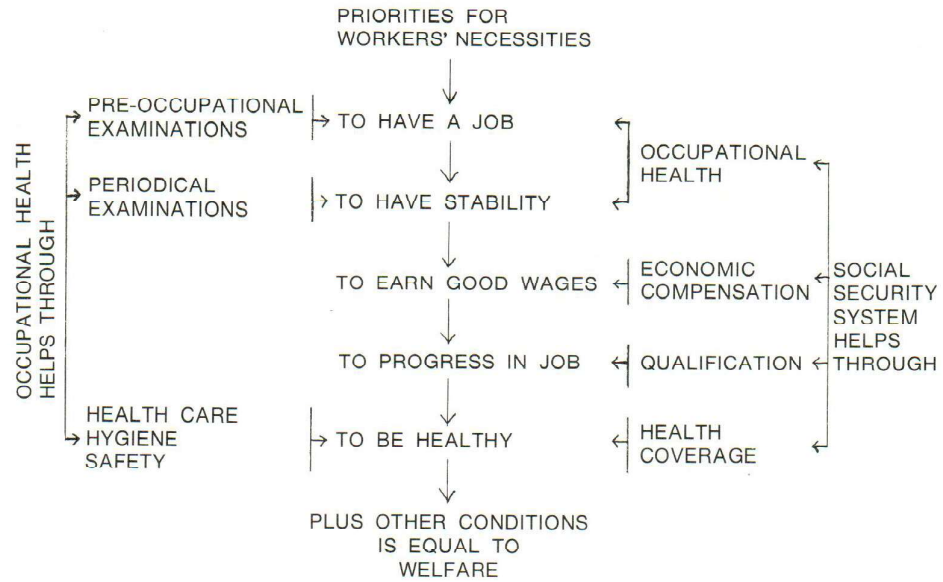


TABLE 3
Hygiene and safety determinants.

Factors related with				
	Society	Enterprise	Work	Workers
Medical	Health policy Health systems Level of community health	Occupational health services Hygiene and safety policy	Environmental conditions Safety conditions Materials	Fitness Health education Habits Attitudes
Technical	Type of available technology	Size Organization Technology	Duration Rhythm Shift work Methods	Qualification Years working Experience
Social	Political ideas Legislation Security Organizations Demography	Relations with workers Wages	Job groups	Family necessities Cultural patterns possibilities
Economic	Resources for development Benefits	Plan for investments Benefits	Productivity	Benefits

increase of productivity is one of the means to promote health through economic development. One may try and give an answer to the question by examining separately the reasons and attitudes of workers, employers and the government as regards occupational health.

WORKER'S REASONS AND ATTITUDES

Health is not primary a necessity, it is preceded by food, work, good remuneration, housing, and possibilities of promotion. Looking at health from this point of view, the criterion appears logical, because a great part of that necessity is satisfied by the beneficial effects of the other necessities. In fact, the actions taken to satisfy these necessities are health promoting. One of these actions of occupational health in this sense is vigilance over health, in this particular case pre-occupational examination, which is the equivalent of health examination in general medicine (Table 1).

In developing countries dependent workers must overcome great difficulties in gaining their livelihood. The most important causes of these difficulties are chronic underemployment, low wages and considerable differences between the country's individual regions and between individual sectors and levels of workers². Therefore, occupational health should not interfere with the obtainment of employment or higher wages. This approach of occupational health, which might seem devoid of idealism, is possible through combination of several factors, briefly analysed below.

Education

Historical and cultural reasons have contributed to create an image of medicine closely related to "disease" as opposed to "life". This is not exactly true when related to work. As a matter of fact, to be able to work means to be able to live. To suffer an ailment does not imply inability to work, especially when one has to work to meet the bare necessities of life. Thus, the need for occupational health may be regarded as a higher stage in the concept of the medicine-health relationship. In order to reach this higher stage the following are required: good educational level, good health education and appropriate practice of occupational health in work conditions which make this possible.

Social security

This aspect of the life of a modern community involves some problems which have a direct bearing on occupational health. One of these problems is the possibility of re-employment. It may not be easy to find a new job, without loss of category or income when, through sickness or accident, a worker becomes disabled. The chances of re-employment may be reduced by medical check-ups prior to admission. Through these medical actions it is possible to establish an abnormal disabling condition or a condition which may cause absenteeism and

lead to legal suits for real or presumed damages to the worker's health. The law has overcome the problem of the disabled by establishing the obligation to employ a certain percentage of disabled workers. But at the same time, another law may obligate employers to assign a certain task to already employed workers who have fallen ill or have suffered accidents. In Argentina there are legal regulations to protect disabled workers. Thus the required percentage of workplaces reserved for disabled persons can easily be covered by these workers, while unemployed are still left with the difficulty of obtaining a job. A social problem arises, but the law is satisfied.

When the legislation establishes that indemnification for health damage is the only obligatory social compensation to which a worker is entitled, other important aspects of social security become totally or partially neutralized. These include reclassification, professional reorientation and rehabilitation. Occupational health, which should help to achieve these ends, deviates towards the determination of the degree of the ensuing disability. Justice will do the rest. Thus, again, certain social and legal problems are satisfied to the detriment of others. However, this practice may readily be adopted because it is expeditious and direct.

In order that occupational health may fulfill its purpose as regards work ability and possibilities of re-employment, an adequately developed and coherent social security system is necessary. The system, in turn, requires not only legislation and administrative procedures, but also all kinds of resources, so that a physically impaired worker may go on being a necessary and useful person instead of becoming a social burden. When this cannot be achieved, the relationship between the workers and occupational health becomes limited and distorted. Underdevelopment is responsible to a great extent for the weakness of the social security system.

Trade-union practices

Trade-union practices must ensure that the workers satisfy their necessities of work, stability, good remuneration, social benefits, possibilities of promotion and health. Thus the understanding which workers may develop as regards the necessity of occupational health from the viewpoint determined by trade-union practices is subject to those problems which are real priorities. There is no logical motivation to struggle for a high level of medical, hygiene and safety attention if there are no prospects of stability, good remuneration and promotion.

Under these conditions occupational health cannot expect trade-union practices to be of any real help to its development.

Demography

In connection with this factor and as regards strictly occupational health, the situation may be characterized as follows: considerable annual growth of the labour force, shortage of specialized personnel and inadequate service organization and equipment.

The apparently unpromising prospects do not imply a logical pessimism, since they are subject to change. But neither the workers nor the employers are able to introduce changes. Only the government can do that by means of consistent and programmed support for the development and organization of occupational health.

Hygienic and safety conditions at work

These conditions will be fully understood when examining Table 3. This table tries to show that hygiene and safety at work are a result of more factors than just attitudes motivated solely by a conviction to be inculcated in workers and employers by the Occupational Health Service¹. As pointed out repeatedly, developing countries have an overwhelming majority of small and medium companies, a preponderantly rural population, low socio-cultural levels, and scarce resources. Small and medium enterprises are generally poorly organized, technically backward, and economically restricted. Rural and migrant workers in particular are chronically unprotected section of a developing society. Hygiene and safety continuously require many kinds of resources, since a satisfactory situation can be reached only by long-term planning. Work cannot be stopped in order to correct the condition under which it is performed. Keeping up production is the chief manner in which the necessary resources can be obtained. One of the difficulties lies in the relation between allocated resources and obtained benefits. This could also be expressed by asking: Do the resources allocated for hygiene and safety represent an expense or an investment?

Workers may feel annoyed by having to discharge their duties under unfavourable conditions. But the damage caused by these poor hygienic and safety conditions will not prevent other workers from replacing the affected ones. Besides, not all suffer damages evident enough to make workers realize that there exists a relationship of cause and effect in the damage sustained. Many of the damages can be assessed only by means of careful epidemiological studies. It is very unlikely that such studies would be familiar to workers. Thus, workers carry on in their occupations – out of habit and necessity, except in very special situations – even though the conditions are inadequate.

EMPLOYERS' REASONS AND ATTITUDE

This sector of society has the objective to produce goods and services. Its function is to satisfy market requirements, its right is to earn profits and its obligations are to accept risks and further the community's economic and social development.

In order to carry out their functions, which enable them to attain their objectives, satisfy their rights and meet their obligations, employers have at their disposal administrative, technical and social instruments. These are all closely interrelated and consequently, interdependent. As an instrument, occupational health acts as follows:

As an administrative instrument it must contribute towards solving problems related to the resource called "personnel". The most important of the problems concerning occupational health is absenteeism due to health reasons.

As a technical instrument it must treat the worker as a part of the economic and the productive mechanisms. Therefore, it must contribute towards better results of the whole system, taking into account the special characteristics of the machine called "worker". These characteristics are biological, psychic and social. The biological characteristics make the worker, as a living organism, react to stimuli originated by work with adjusted physiological responses, by means of intervention of the first system of signs. The psychic characteristics are related to experience as regards the socio economic and the work situation and have an influence on relationships within the company. They are a product of the second system of signs. The social characteristics comprise integration of work groups, integration of family groups and the relationship between the producers and the consumers of goods and services.

As a social instrument, in relation to employment, company must create, preserve and develop jobs. Occupational health is of service to companies as regards the qualitative development of jobs, by means of pre-employment and periodical examinations.

Working conditions are of special interest because of the relations they originate between health and productivity. These relations are actually and potentially conflictive (legal demands, strikes). Thus occupational health as an instrument, must contribute towards avoiding, limiting or mitigating them. It is not a highly suitable instrument for that purpose because the contradiction between health and productivity are solvable only by technological and social progress which allows a wider and better use of human qualities beyond the purely muscular ones and primary reflexes⁴.

As regards participation in management and profits this may be direct or indirect. As far as occupational health is concerned it would be direct – in hygiene and safety committees, or indirect – in the extension of medical coverage beyond the limits established by labour laws.

It should be noted that the participation of the workers is limited by several important factors: the number and the importance of the problems should justify the functioning of hygiene and safety committees; the concentration and organization of workers; the size of the enterprise, its economic power and its policies. In practice, only enterprises of a certain size and power are able to offer benefits. Small and medium-sized companies need one or both of the following conditions: an association between two or more companies, which is rather infrequent and an appropriate general social security system.

THE GOVERNMENT'S REASONS AND ATTITUDES

The government has its own philosophical and political concept of economic and social development. Within the framework of this concept it must

co-ordinate the interests of the employers and the employed, bearing in mind, at the same time, that it is an employer itself.

The reality in accordance with which it must operate is a structured reality, difficult to change and different for each country. However, the level of socio-economic development determines certain similar features of countries with similar development levels. These similarities make it possible, considering the achieved development level, to infer certain important features related to occupational health. For developing countries in general these features would be as follows:

- Predominance of rural workers over factory workers. This means that only a minority of workers are sufficiently concentrated and organized to make it possible for occupational health to approach them.
- Important internal migrations, generally towards urban areas. This makes workers impelled by their economic, familiar and housing needs. It also means workers who must overcome their uprooting. It means, finally, health problems not only for them but also for those who must work with them.
- Low proportion of skilled workers, technicians and professionals. This means backward technology, i.e. intensive physical effort and hard working conditions.
- Scarce and badly distributed general health resources. This means that for occupational health, or a highly complex specialization, proportionately fewer resources will be available.
- The inadequate social security system referred to before which means a limitation of the field of activity for occupational health.

Certainly, the government may pass laws or impose regulations to promote solutions of these problems. What may happen – and does happen – is that the real extent of the laws and regulations is limited by the development level of the respective society. In order that occupational health may carry out a minimum of its functions of medical care, hygienic and safety measures, epidemiological studies and technical and legal counselling, it must have an organization of its own to be able to set up relationships with social and labour structures, which also require a minimum of effectiveness and organization. In organizing the basis of occupational health one may choose between two main orientations: a non-integrated system and an integrated system.

Non-integrated system

In this system occupational health is the responsibility of the employer, who has to solve his own problems related to the health of the workers. This sets limitations to the scope of occupational health because medical care deals only with problems which are characteristic of the respective company and have no connection with general health problems. Hygiene and safety are also circumscribed within the limits of individual enterprises with only slight connection with the hygiene and safety problems of the community as a whole.

They become a bureaucratic and legal matter. The level of complexity which is possible to achieve for occupational health within a company should be adequately correlated with the level of complexity of the Occupational Health Service. The lower the level of complexity of the company and the medical service, the lower the level of skill required for occupational health personnel. May we then conclude that developing countries need no more than a low level of complexity for occupational health? For almost all companies it is impossible to deal with the many extra-employment problems that have a bearing on the health of their workers.

Integrated system

Within a certain planned economic and social development an integrated system is more feasible. Occupational health may either form part of a general health system, or it may be organized as a separate system functioning harmoniously with the general system. In either of these two variants occupational health is faced with difficulties, i.e. big enterprises may have very complex occupational health services, capable of functioning efficiently and with great autonomy. A problem lies in distribution within the country, of small and medium enterprises which do not follow any order as regards branch of activity or geographical area. The difficulties that an integrated system is faced with are also rural and migrant workers and the weakness of the general health system, which will have to incorporate problems of great magnitude and complexity characteristic of occupational health.

In spite of these and other difficulties the integrated model appears more consistent with Recommendation 112. This greater consistence is due to the importance of the health problems deriving from work. These must be confronted without delay for they have repercussions on the productive capacity of society while raising social charges and making necessary the allocation of increasing amounts of resources for non-productive activities.

The integrated system also makes it possible to create a better basis for the best possible use of the total resources, of whatever origin, allocated both for general health and for occupational health (e.g. technical assistance to small companies for the study of their hygienic and safety conditions, and for the introduction of eventual improvements). Finally the level of occupational health may be raised as a medical specialty, operating in concordance with other specialties.

CONCLUSIONS

In developing countries, occupational health, provided the non-integrated model is chosen, is only possible in urban areas and in enterprises of a certain size and economic power. However, natural limitations set to enterprises in seeking to encompass the whole range of occupational health, turns occupational health into a special and restricted medical service (Table 4). This is not meant in a depreciatory sense. When occupational health operates as a separate, integrated

TABLE 4
Occupational health in developing countries (limiting features).

Features	Meaning	Consequences
Predominance of rural workers over factory workers	Minority of workers concentrated and organized	Difficulties for occupational health in reaching workers
Migration to most developed areas	Problems from social and demographic origin	Magnitude and variations in problems to face
Few qualified workers, technicians and professionals	Backward technology	Intensive physical efforts Hard working condition
Scarce and ill-distributed sanitary facilities	Scarcity of resources for complex specialities	Poor development of occupational health
Insufficiency of the social security system	Insufficient coverage for workers and their families	Restricted possibilities for occupational health Boomerang effects

system, or as a branch of a general health system, it operates according to what it actually is: one of the sectors constituting the body called Public Health. Nevertheless, its development within a general health system depends on the development of the latter. Therefore it must be considered that developing countries face great and ever growing difficulties arising from the very underdevelopment they must overcome.

Occupational health can properly develop only within the framework of a genuine economic, social and cultural development. This is because occupational health, like preventive medicine, has to fulfill three functions: protection of health, early diagnosis and adaptation to the job. Health promotion as a prior stage remains outside the scope of occupational health. When people reach employment age, they join the labour force, whether they are healthy or not. Thus, they will be either fully or partly fit. Occupational health will have to take care that their fitness at least, does not become impaired.

Developing countries can choose from three courses of action for setting up and developing occupational health:

- to orient, assist and demand the employers, through legal dispositions and with central administrative and technical support, to see to the strictest possible implementation of the stipulations contained in Recommendation 112;
- to educate workers so that they learn the true nature of occupational health and make use of it for the benefit of their health;
- to develop a general health system in which occupational health will find its place as a medical specialty, or have the possibility to co-ordinate its own activity with that of the general system. This should ensure an adequate coverage, at least in the first stage, for that great majority of workers who do not belong to big enterprises.

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