



Occupational Health Regulations in Nigeria: A Narrative Overview

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Authors' contributions

This work was carried out in collaboration between all authors. Authors BOO, IGO and IKA designed the study, wrote the protocol and interpreted the data. Author BOO anchored the field study, gathered additional materials and re-wrote the entire work. Authors BOO, IKA, LNE, SUU, CPI, CEE and OLO managed the literature searches and produced the initial draft. Author BOO proofread and edited the entire work. All authors read and approved the final manuscript

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ABSTRACT

The immediate and remote consequences of morbidity and mortality associated with occupational health are alarming. It underscores the need to put measures in place to protect employees who are the most vulnerable. This study examined the existing occupational health regulations in Nigeria. A narrative overview of related literatures published texts, manual search, and materials obtained from official data bases and texts was carried out using selected criteria and search terms based on medical sub-headings. Search terms were used individually and in stringed form. Occupational health regulations in Nigeria are underdeveloped. Workrooms are meant to be above 2.75 m high measured from floor to the lowest part of the ceiling. Each worker has a cubic capacity space of at least 11.33 m³. Most employees do not know their rights and labor regulations especially those that are applicable to their own actions and conduct due to high level of illiteracy. Policies and their implementation are below international standards and global best practices to protect the health and promote the safety of workers.

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1. INTRODUCTION

Development of occupational health in Nigeria followed the pattern in other developing countries. Originally, the main occupation was un-mechanized agriculture and animal husbandry. The workforces were mainly women and children. Payment for work was not known. Workers were exposed to many types of health hazards. Treatment then was not organized. Later, manufacturing including construction came into being. Modern occupational health started because of colonization and industrialization by Britain. The first occupational health services in Nigeria was introduced by the Medical Examination Board of Liverpool infirmary in 1789 with the main aim of caring for the health of British slave dealers from Africa to Britain. However, after the abolition of slave trade, the Royal Niger Company of Britain increased its exploration and trading activities in Nigeria [1-8]. The Company organized its own health services that were later inherited by the United African Company (UAC). During the British colonial rule, many of their soldiers were dying of malaria. This led Colonel Laggard to establish health services to take care of the health and welfare of soldiers and other colonial administrators. Later, during the Second World War, the Medical Corps was separated to cater for the military alone leading to the creation of Public Health Service which became the nucleus of the National Health Service [9-14]. This study examined the existing occupational health regulations.

2. METHODS

Key terms were used individually and jointly to conduct hand search, and electronic search on Google and MEDLINE. Search was conducted in line with medical sub-headings (MESH) between July 2015 and September 2016. Officially published documents and authoritative texts on the subject area presented in English Language were drafted for the study. A total of 53 articles were selected initially. Inconclusive articles with some tint of bias, which were 14, were dropped from this number, giving rise to 39 articles. Another 12 articles from unrecognized websites were further eliminated, giving rise to 27 articles. Out of the remaining 27 articles, 9 articles which lacked originality with incomplete references were finally dropped giving rise to 18 articles used for the study.

3. DISCUSSION

3.1 Occupational Health Regulations in Nigeria

The current regulation is the Factories Act 1990, which is the same as the 1987 regulation. If one or more persons are employed in any process for the purposes that may be specified by the regulation governing such registration, provided that the work is done for economic purpose and provided that the employer has the right of access or control. Registration of workplaces is usually made mandatory for occupiers of factories. An appropriate body as may be specified in law is vested with the responsibility to register workplaces in accordance with laid down rules or guidelines. Applicants in prescribed forms seek registration and when they are satisfied that the premises satisfactory, the appropriate body so appointed will authorize the registration of the factory and a certificate of registration is issued to the applicant to that effect. Refusal to issue certificate of registration to an applicant is communicated in writing to the applicant stating the grounds for such refusal [14]. Contravention to this provision or rule will be liable on conviction to a fine as may be specified in the statutes of each country. In notification of change of business premises, it is expected that after an application, seeking registration of a factory has been submitted to the appropriate body, and a change becomes desirable, such a body should be notified of such new development in writing. Any occupier of business premises who contravenes this provision is usually liable on conviction to a fine or imprisonment as may be stated in the country's regulation [15].

General provisions for health include various regulations are available for the health, safety, and welfare of workers in each country today. However, the following factors are commonly adopted to enhance good housekeeping and the promotion and maintenance of health of the workers and include cleanliness, overcrowding, ventilation, lighting, floor drainage, and sanitary convenience. Cleanliness calls for each factory to be kept in a clean state and free from effluents arising from any drain, sanitary convenience, or nuisance. Refuse should be removed on a daily basis, using suitable methods [15]. The floors of every work place should be washed at least once

in a week. In situation of offensive trades, daily washing is required together with some other effective measures. The walls, partitions, and ceilings are washed in accordance with prescribed regulations. Repainting with oil paint or varnishing, at least once in every five years and washing at least once a year with hot water and soap or cleaned by other suitable methods. Premises where offensive trades are carried out should be whitewashed or color-washed and then white or color washing should be repeated at least every year [16].

Overcrowding regulation aims to ensure that no factories where work is being carried on should be so overcrowded as to cause risk or injury to the health of persons employed therein. To this end, each workroom must not be less than 2.75 m high measured from floor to the lowest part of the ceiling or where there is no ceiling, to the lowest part of the roofing material. The cubic capacity space available for each worker must be at least 11.33 m³. This cubic air space excludes any space that may be more than 4.30 m from the floor level. Ventilation aims at ensuring continuous removal of polluted air and odor from occupied premises and the preservation of a pure dust-free atmosphere of proper temperature and humidity with sufficient movement of air. It is therefore required that all factories and workplaces should be adequately ventilated to achieve the desired effect. Open windows provide the simplest form of ventilation so long as the work place is not situated in a dusty surrounding. In order to derive maximum effect, factories should be sited to take advantage of prevailing wind where possible. A mechanical means of ventilation is desirable when natural ventilation is not adequate and where a factory is situated in a dusty environment, or where the existence of fumes, gases or other impurities is harmful [17]. Mechanical means of ventilation may be of absolute necessity depending on the nature of business in a factory. For example, in a spinning department of a textile industry, mechanical means of ventilation is preferred to open windows where strong air current prevails. It is emphasized that whosoever is appointed to make regulations must indicate ventilation standards necessary for the workplaces with sufficient natural lighting is highly desirable in any room and particularly in a factory [18]. However, effective provision is usually made to secure and maintain adequate and suitable artificial lighting for the job. Particular attention should be paid to the replacement of dead bulbs and fluorescent tubes.

Glazed windows and skylights used for the lighting of workplaces and passages are kept clean and unobstructed except screens used to mitigate heat or glare penetration. In any processing business liable to render the floor wet should be efficient too. To do this effectively and with ease, it is required that floors should be constructed with slight slope to aid natural drainage into gutters. Where such gutters discharge into drains, such drains are required to have a suitable gradient. Provision usually requires that sufficient and suitable sanitary conveniences be provided, maintained, and kept clean for all persons employed in the workplace. Effective lighting of the conveniences is important from the point of view of encouraging patronage and promoting healthful practice. In an event where persons of both sexes are to be engaged, except for the situation where only persons engaged are members of the same family, such conveniences should be available separately to afford proper and separate accommodation for both sexes and clearly marked "males" or "females". However, in order to have ease of usage, the following requirements are necessary: one unit for every 25 female persons employed or one unit for every 20 male persons employed. However, if more than 100 persons are employed. Sufficient urinal accommodation is provided, after the first 100 persons, 1 unit for every 40 workers. It is required that sanitary conveniences should be separated from working places by corridors or open space. The walls and floors of sanitary conveniences should be provided with tiles. Wash-hand basins should be provided. Provision of doors ensures privacy during use [18].

3.2 General Provisions for Safety

Eye injuries caused by accident arising from powered machinery in industries are common. In order to minimize these eye injuries; it is appropriate workers must wear eye protective devices. Industrial regulation requires that every power input and output controls should be efficient. Other machinery or its part is dangerous if it is a possible cause of injury to anybody acting in a way, which a human being may be reasonably expected to act. On rare occasions, an examination of a machine may reveal that it requires immediate lubrication or adjustment and that this can only be carried out while the machine is working. In such rare instances, and subject to very stringent conditions, an authorized person by the management of a factory who is 18 years of age and above may

approach such unfenced machinery while it is in motion for the purpose of examination, necessary lubrication, or adjustment. All other prime movers and flywheels must be securely fenced irrespective of their position. Such fencing is required by regulation to be a substantial construction and maintained in an efficient state of repairs. In the circumstance where the management of a factory claim that a machine or its part cannot be securely fenced, as they often does, its use should be banned. Compliance with provisions governing fencing of machinery by management in industries should be strictly enforced as non-compliance often leads to accidents [18].

In many countries, adequate and effective means for detecting fire in industries and other related workplaces are available. Such means should be correctly installed in appropriate places within the factory. Most importantly, the management of a factory should ensure that all staff employed are adequately trained to enable them operate the fire extinguishers provided in the workplaces. Fire drills are called for in order to make workers conversant with the practice of handling fire incidents. This practice is controversial in some quarters on the claims that it may make workers non-responsive to situations of real fire outbreaks in the factory or workplace [16,17]. The two options should be weighed for proper decision to be taken. The possibility of escape in an event of a fire outbreak in a workplace should be given due consideration. Adequate means of escape therefore should be provided. Emphasis is laid on doors, which ensures easy exit for persons working in locked factories. Such doors should be easy to open from inside and they should open outside unless they are sliding doors. All exits should be distinctively marked in red letters, in adequate sizes, and in English or any other local language understood by the workers. The routine practice of checking the condition of all fire equipment should be enforced [18].

3.3 General Provisions for Welfare

A supply of sufficient and safe drinking water must be provided and maintained for all workers and kept free from contamination always. The water supplied should be readily accessible to all person employed. Where the supply of water is not pipe borne, it should be contained in suitable containers. Facilities for

washing are required to be provided by the management of a factory in adequate and suitable number. These should be easily accessible to the workers and kept in a clean and orderly condition to encourage usage. More often than not, workers wash up without the use of soap. It is important to ensure that the employer to facilitate thorough cleaning especially for workers handling poisonous agents provides soap. Special washing arrangements should be made for workers engaged in asbestos factories. The provision and maintenance of suitable accommodation for changing and keeping of clothing not worn by the workers during working hours cannot be over-emphasized. Utilization of this facility can be maximized where the workers are supplied with appropriate protective clothing especially in certain processes where poisonous chemicals and other substances are present. In such situations, prohibition of workers taking their protective clothes home is imposed to safeguard their families from unnecessary poisoning which can result from accidental contamination by the clothes. The first aid box or cupboard of a suitable size must be provided for 150 workers [1,13].

The box or cupboard must contain materials required for first aid. Where more than 150 workers are employed, additional first aid box must be provided for every 150 workers. Each first aid box must be prominently marked "FIRST AID" and placed under the charge of a responsible staff that should be known by the workers and should be efficient and easily accessible through out working hours. The contents of a first aid box should include items such as sterilized dressing for cuts and burns, scissors, cotton wool, waterproof and adhesive plasters, antiseptic cream, eye bath and drops, tourniquet, etc. It is worth mentioning that tourniquet is being omitted in the list of items in some countries due to danger arising from abuse. However, they should only contain what is laid down in the country's regulation. Where first aid personnel are trained, simple medications may be stocked. In certain circumstances, factories such as saw mills, certain chemical works, blast furnaces, iron mills, etc., are required to provide and maintain an ambulance room. This service will facilitate easy summoning of an ambulance or other means of transport needed in cases of accidents or illness. The persons in charge of the ambulance room may be a qualified nurse engaged in the clinic [15].

3.4 Special Provisions and Regulations for Health, Safety, and Welfare of Workers

Suitable protective wears (including clothing) and appliances should be provided, maintained and its continuous use encouraged in all factories and workplace where workers are engaged in any process involving exposure to wet conditions, injuries, or offensive substances. For example, such suitable protective wear may include, where necessary, suitable gloves, effective screens, foot wears, waterproof aprons, goggles, head covers, etc. Workers in large establishments are provided with separate rooms or canteens where their meals are prepared and served at appropriate times. Eating is prohibited at workplaces, where dangerous substances such as lead, mercury, cyanide, etc, are present. The provision of adequate running water is desirable to ensure that the workers observe personal hygiene. Efforts should be geared to educate and enlighten the workers on the rationale behind these practices. An inspector of factory may after informing an employer or any of his agents in the workplace take for analysis samples in sufficient quantity of any substance used or intended to be used in a workplace. Particularly if the inspector thinks such a sample may prove on examination to constitute danger to the workers. A government chemist or an authorized person who may be required as a witness at a subsequent legal proceeding must analyze such sample [16,17].

3.5 Notification and Investigation of Accidents and Industrial Diseases

Occurrence of accident in a factory which causes loss of life or disability for more than a specified period of days (in the case of the Nigeria provision – three days) must be reported in writing to the inspector of factories by the employer. If death occurs to an injured person later because of an accident, the inspector must be informed immediately. In most countries there are prepared forms for these types of reports.

Notification of industrial diseases if an employer suspects that a case of occupational disease has occurred in the factory, he must immediately notify in writing the nearest inspector of factories. Some of the occupational diseases, which are reportable, include lead poisoning including poisoning by any preparation or compound of lead, phosphorous, mercury, manganese,

arsenic, and aniline. Others include poisoning by carbon sulphide, benzene poisoning of blood, chronic ulcerations due to chronic acid, or dichromate of potassium sodium, ammonium, or any preparation of these substances. Anthrax, pathological manifestations due to radium or other radioactive substances, or x-rays, jaundice associated with toxic substances, anemia due to toxic substances, and primary epithelial ulceration of the skin arising from the handling of or use of tar, pitch, bitumen, mineral oil, paraffin, and other compounds are all included. Products or residues of these substances; poisoning by halogen derivatives of hydrocarbons of the aliphatic series; compressed air illness; and asbestosis are also inclusive [15,16,17].

3.6 Exceptional Applications, Extension and Miscellaneous Provisions for Occupational Activities

Ensuring compliance with occupational health regulations, entering and inspecting facilities upon presenting relevant credentials to the occupier of a factory or his accredited agent are among the power and duties of inspectors. Every part of a factory including registers, certificates and other relevant documents required under available regulations of the country may be inspected. Workers also may be questioned for relevant information during such visits. No employer or his representative shall deny the inspector entry or obstruct him in carrying out his lawful duties. An inspector may prosecute or defend in a court of law any accused charged under the law [16]. Each employer should furnish a worker a place of employment free from hazards, which are capable of causing or likely to cause death or serious physical harm. The employer should permit only those workers qualified by training or experience to operate equipment and machinery. Each employer must enlighten his workers of any manufacturing process, which is dangerous or hazardous. Employers should provide and train their workers in the use of appropriate personal protective wears. Furthermore, the employer shall make all operating departments aware of all occupational health regulations governing the factory's operations and ensure that all equipment and materials purchased meet recognized safety practice [17].

Employers may take full disciplinary action against any worker who violates observation of safety practice in workplaces. Workers should

comply with laid down health and safety regulations relating to their workplaces, particularly those regulations that are applicable to their own actions and conducts. They may request an inspector of factory to conduct incidental inspection if they so believe an imminent danger exists or a violation of a regulation by the occupier of a factory threatens their physical well-being. Workers are also expected (duty bound) to use all protective wear and appliances placed at their disposal by their employers [16]. Unfortunately, majority of the labor force are uninformed. Because of high rate of illiteracy, most employees are unaware of their rights and labor regulations especially those that are applicable to their own actions and conduct. The role of trade unionists and other health professionals in educating and enlightening workers on occupational health related issues will go a long way to compliment efforts of the employers in this regard [17,18]. Other regulations covering occupational health at varying degrees of implementation include Environmental Impact Assessment Law of Federal Republic of Nigeria (LFN) 2004, the Land Use Act, and Harmful Waste, Nuclear Safety and Radiation Protection Act, and Oil pipelines Act, LFN 2004 [19,20]. Other regulations are the Nigerian Mining Corporation Act, Animal Diseases (control) Act, Nigeria Urban, and Regional Planning Act. Quarantine Act, National Environmental Health Practice Regulations, and Workmen's Compensation Law 1990 have already been introduced [21,22].

4. CONCLUSIONS

Occupational health infrastructures are underdeveloped to meet the needs of workers in all parts of the world. The need for effective occupational health services is growing rather than decreasing. The ILO instruments on occupational health services and the parallel WHO strategies provide a valid basis for the significant development of occupational health services, and by each country as it sets policy objectives to ensure the health and safety of workers in the country. Occupational health services in Nigeria when well regulated will among other benefits; reduce mortality and fatality thereby increasing life expectancy; reduce negative trends (occupational diseases/injuries); improve overall health index; and boost economy through massive job production. This will enlist her to the league of countries practicing global standard concerning in Occupational Health and Safety. Occupational health insurance is still not

functional in most organizations especially those who predominantly operate the casual working system. This should be resisted and adequate measures put in place to check the menace.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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