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Occupational health hazards of library professionals in India

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The paper revisits a wide variety of health hazards in the library workplace. Through an exhaustive review, it explores the underlying causes of occupational risk & injuries to library workers; aiming to raise the awareness of healthy working practices and statutory requirements. It reflects the viewpoints surrounding the health and safety in libraries to illustrate possible health hazards of library workers in an Indian context. The paper informs about a variety of burdens that persist in the library workplace. It also outlines the major causes of occupational risk in terms of physical, chemical, biological, technological, emotional, and psychosocial hazards. It reveals how occupational hazards emanate in the library workplace and how library managers can prevent these hazards by creating health & safety compliance in the workplace. The paper concludes that there is a need for transforming the library profession to improve the level of occupational health practices ensuring standard norms and follow-up actions.

Keywords: Occupational health; Health hazards; Library workplace; India

Introduction

Healthy workplace with sound infrastructure always contributes to good health, hazardfree life and incremental job-performance. Like many other workplaces, libraries are also prone to occupational hazards. Many of the hazards are still unrecognized and some causative agents of a few occupational diseases are overlooked.

Occupational health and safety (OHS) has emerged as an issue since the inception of International Labour Organization in 1919. OHS refers to the "protection of workers in their employment from risks resulting from factors adverse to health"– as defined by a joint ILO-WHO committee in 1950[1]. This novel approach has become operative to ensure health and safety in workplaces on the eve of industrial revolution. However, the techno-globalization and its effects have been perceived as vital in changes in work environment. Practically, such changes in organizational practice have been generating newer hazards, exposures and risk[2].

So, the protection of workers against sickness, injury and diseases of occupational origin has been a crucial agenda for many countries worldwide. It is also legalized in most of the developing countries like India. But in reality, it has not been very effective. Rather, serious health hazards are persistent in both organized and unorganized sectors. Most of the working-premises have improper safety without sufficient facilities; thus nurture injurious practices with inferior quality tools and techniques. Therefore, it is essential to have a close look into health-hazards in every workplace and the libraries are not an exception.

Historical sketch

Occupational health has long been a global issue. A number of studies across different sectors, often combining with remedies, have been evident in literature. An enthusiastic work has done by Hatch in 1964[3]. He described major accomplishments of occupational health during past fifty-years in a solemn and thoughtful manner. In December 1970, Federal Government of United States enacted landmark legislation through the provision of Occupational Safety and Health Act. Within a year, International Labour Office (ILO) published the first volume of *Encyclopaedia of Occupational Health and Safety*. Occupational diseases gradually received formal recognition by the National Institute for Occupational Safety and Health (NIOSH 1977)[4] under the aegis of US Department of Health, Education and Welfare; which led to the implementation of policy in different

sectors of the society. Occupational health awareness in developing countries also came into force[5].

Barth and Hunt (1980)[6] made a significant improvement by establishing the claim for compensation on work-related diseases, injuries and accidents. Thereafter many serious efforts were initiated to introduce surveillance of occupational diseases with the development of reporting requirements for diseases determined to be occupational in origin. By that time Giguere et al (1982)[7] patented the occupational health surveillance (vide US Patent No. 4347568) for monitoring environmental factors within a workplace that allowed corrective measures in a variety of situations. In fact, occupational health and safety enforcements began to meet the health & safety regulations and led to the development of a hierarchy of regulatory agencies[8]. Gradually the intensity and magnitude of stress at workplace have been considered as an indicator to occupational health[9].

Over the past two decades, modern practices have increased occupational risks by intensifying recurrent health problems and introducing new hazards to health of the employees. The situation demanded further improvement on determinants of occupational hazards and their estimation technique, especially for developing countries[10]. Many scholars observed that, workers in developing countries have an increased-risk of occupational injuries with high fatality rates. The legal framework on their protection seem to be often inadequate. In a critical review, Jeyaratnam (1993)[11] recognized the priority aspects of occupational health issues in developing countries. It is estimated that the global occupational death of workers is approximately two million per year[12].

Indian scenario

The Constitution of India provides guidance for ensuring occupational safety and health of the workers through Article-39 and Article-42. The National Safety Council (NSC) was set up in 1966 to generate safety awareness and to sustain relevant services at the national level under the Ministry of Labour and Employment (MoLE). The labour departments of the states and union territories of India are responsible for regulating occupational health and safety at workplaces. The Government of India (via MoLE) brought out the national policy on safety, health and environment at work place, in February 2009. The country has established the Indian Occupational Safety and Health Information Network (INDOSHNET) for sharing related information confined to national and international level[13].

Risk evaluation against hygienic standard in the workplaces is a standing instruction of Indian National Labour Bureau. However the National Institute of Occupational Health (NIOH, Ahmedabad) is dedicatedly responsible to carry out the health studies in hazardous occupations for comprehensive evaluation of risk factors and prevention of hazards at workplaces[14]. In spite of that, unlike many developing countries, inadequate information and awareness of occupational health hazards create major obstacles to effective prevention and control of occupational diseases in India.

Pingle[15] summarized the complex scenario of occupational safety and health in India. In 2012, the International Labour Organization (ILO) and the Government of the Republic of Korea have signed an agreement for providing US$1,140,000 as well as technical expertise to support the development of decent work in Asian countries including India.

Although occupational health policies have been put into place in India; these are often non-existent in practice. The country had a total population of 1.237 billion in 2012; where more than a quarter of the population is below the national poverty line, and almost a quarter is illiterate. Thus it counted the working age population of India to be approximately 500 million. But unfortunately, more than 90% of the work force is in informal sector and less than 10% workers covered by existing health and safety legislation (ILO 2013)[16]. Therefore, formulation of legislation to enforce implementation and compliance to government (organizations) is obviously a crude agenda. It is indeed requires coordination between the ministries (of labour, health, environment, education, industry, social security, etc), departments and organizations concerned.

In India, work processes are gradually being mechanized. But most of the industrial process considers workers as a tool for production, putting their health and lives at risk. As per epidemiologists' estimates; nearly 36,700 occupational fatalities occur annually, with further 183,00,000 occupational injuries, and about 18,50,000 workers suffer from occupational diseases in India[17].

For such a big workforce in India, no such provision of statistical records has been developed for unorganized sector. In fact, sufficient data is not available to formulate coherent strategies for occupational hazards of the informal group of workers[18].

Scope and objectives

Libraries are building blocks of modern civilization. Of course, there is an increasing attention to library workforce in the knowledge-driven society. Library personnel play an important role in providing information services. But they are also prone to health hazards of the workplace.

This paper is basically intended to demonstrate on occupational health and safety in Indian libraries. It illustrates typical health problems of library workers, bad practices in libraries, and points out the statutory requirements from an Indian perspective. The study has been conducted to depict a systematic overview of relevant information surrounding the health and safety in libraries.

The study aims to raise awareness of healthy working practices and looking at the lack of consensus on the determinants of occupational health hazards. It recognizes possible agents of health hazards to library workers and also outlines a few inherent causes of their occupational risk and injuries.

Review of literature

Occupational health problem has long been a tenet of librarianship. Libraries around the world do have a history of occupational health hazards. Bichteler (1987)[19] identified that exciting technological revolution, especially while using computer in libraries has been creating a number of psychosomatic illness or techno-stress among staff and patrons. Rooney (1994)[20] investigated that ergonomic difficulties in workstations and inexpert planning for library organization affect the human sensory organs. Clyde (1994)[21] also explained that most often the library equipments and peripheral tools are not ergonomically designed; causing health hazards for both staff and user. Thibodeau and Melamut (1995)[22] opined some ergonomic factors in libraries that are producing new hazards including stress, trauma disorders and fatigue. Atencio (1996)[23] observed that eyestrain is a frequent complaint of library users (those are using computer at least three hours a day) caused by improper ergonomics or inappropriately adjusted display terminals. Similar views are posed by Amba (1998)[24], Vasi (1998)[25], James and Witt (1999)[26] in automated library environment. Szunejko (2000)[27] addressed on ergonomic issues in library technical services that leave staff members vulnerable to risk of repetitive strain injuries.

Pease (1995)[28] recognized the incidence of 'workplace violence' in libraries, usually emanates from inappropriate behavior and misconducts of violent patrons, due to their ill temperament; thus impose sentimental injuries (emotional abuse) on library staff. Willis (1999)[29] realized that working at front-desk of the library can be a lot of emotional stress with conflict, as patrons come to the library in different moods. McCrady (1999)[30] described that library-staff dealing with old documents are automatically exposed to a arge variety of micro-organisms. Many of them are known to causes chronic or fatal diseases.

Most of the libraries in India have old-documents that are covered with layers of dust. Interestingly, School of Public Health at the Columbia University observed that exposure to certain chemicals (viz. toluene, benzene, ozone, and ammonia) posed harmful effects to both in men and women; which may cause infertility and hormonal imbalance, even birth defects[31]. More details on effects of workplace hazards to female reproductive health are explained by NIOSH (1999)[32].

Ataman and Ataman (1995)[33] identified four categories of health hazards that persist in library workplace. Verzosa (1999)[34] earmarked the occupational injuries in library workplace including physical discomfort, musculoskeletal disorders, psychological and emotional stress. Clarke (2002)[35] discussed about the ideal library environment in terms of health and safety. However, the Canadian Centre for Occupational Health and Safety (2003)[36] stated a clear-cut guideline for evaluating and controlling health hazards in library workplace.

Murray (2003)[37] reported the slips, trips and falls in library premises at the time of lifting objects that caused most of the library accidents. Sharp edges of furniture, open cabinets, shelves, electrical cords, worn-out carpets, etc. are can cause injury especially in circulation area and shelving zone[38].

Keiser (2004)[39] illustrated the hazards due to employee tussles (caused by unionism, inter-personal maladjustments) and other types of injuries in libraries. Gehner (2004)[40] elaborated on how repetitive tasks affect library cataloguers due to poorly designed workstation with ill-fitted chairs, postural misalignment, and awkward poses while operating machineries for extended period. Thus cataloguers commonly suffer from pain, numbness, fatigue and musculoskeletal disorder (namely Carpal Tunnel Syndrome or CTS, due to compression of the median nerve in the forearm). Kaehr (2008)[41] described the causes of library related injuries and possible solutions. Edwards (2009)[42] endorsed that health and safety issues are gradually becoming more critical in libraries; as modern tools/techniques and interior designing creates a hurdle to the operating staff. The University of Edinburgh (2010)[43] reported that carbon dust, toner cartridge, laser beam, polymer resin, ultra-violet light, machinery heat and ozone as sources of possible health concern to the service operators.

MacLean (2011)[44] reviewed the health and safety in the UK Higher Education libraries. Mahalakshmi and Sornam (2011)[45] analyzed the utilization of ergonomics in library workplace. They also studied the prevalence of techno-stress among library practitioners of the Anna University, Tamilnadu (India). Grant (2014)[46] outlined the deficient areas and non-compliance of occupational health and safety in the Alma Jordan Library at the West Indies University, St. Augustine. Ifijeh and Adebayo (2014)[47] examined the occurrences and policies of occupational health hazards of a few university libraries in Nigeria. Bermack (2015)[48] shared experiences received from Berkeley Public Library (California) on how librarians can protect themselves from violence at the workplace.

From the literature review, it is seen that there are several studies on the occupational health hazards in libraries but very few of these studies are from India.

Occupational hazards in libraries

Zero risk at any workplace is unrealistic. According to the Indian National Classification of Occupation (2004)[49], the librarians and related information professionals are under code 243.

Practically most of the library employees and even employers in the country are not aware about health and safety compliance at work. Usually they follow unhealthy working conditions, incorrect motions and unsafe practices. Healthy procedure and safety guidelines are far beyond the culture of Indian libraries. There is no expected standard-of-practice, no plan for capacity building, and little provision for safety inspection or health training. But huge problems exist in libraries relating to occupational health and safety of concerned workers. Occupational hazards in libraries can be described as follows.

Physical-hazards

Physical designing of functional units and inexpert planning for library organization can cause injuries, especially in the circulation area and shelving zone. Generally, such hazards arise from lifting objects, shelving books, treads on stairs, dispositions of shelves, sharp edges of furniture, open cabinets, worn carpets, water leakages, congested movements, haphazard or clumsy motions, slips, trips and falls. Frequent use of stairs due to multistoried stack-area of a library and awkward (long height) book shelves can be hazardous to health of library workers.

Ergonomic-hazards

Large majority of libraries are regularly carrying out a few cumbersome activities through a variety of instrument, often without following standard norms and practices. Ergonomic difficulties in library equipments, poorly designed workstations, positioning of library settings affects on human sensory organs; so as to create health hazards for staff and patrons. Most often the library equipments (especially while using computer) are not designed ergonomically; which may cause postural difficulties, musculoskeletal disorder, visual deficiencies, eyestrain, back-pain, fatigue and numbness.

Bio-hazards

Dutkiewicz (1988)[50] identified the biological agents (about 193) as important risk factor in workplaces. Either they are infectious or toxic and allergenic, even carcinogenic. Thus growing evidence of bio-hazards in library premises and a variety of micro-organisms are known causes of chronic or fatal diseases. Library personnel, who are dealing with old books in a stuffy area or handling leather-bound volumes (having fungal growth) causes itching and dermatological manifestations. Many harmful insects, moulds, reptiles, even a few serpents usually choose their habitat in libraries.

Chemical-hazards

Exposure to certain chemicals (toluene, benzene, ozone, ammonia) emits in different circumstances posed harmful effects like drowsiness, lung irritation and cancer. Such chemicals may lead to hormonal imbalance and infertility. Thus creates a hurdle for reproductive health of library staff. Use of harmful pesticides in an unscientific manner (inadequate quality with abnormal dose applies during working hours) for preservation and conservation of documents makes the library environment hazardous to health.

Environmental hazards

The atmospheric, climatic circumstances (humidity, temperature) and indoor air pollutants (dust, micro-particles below 10 micron) pose varying degrees of risk to health for library workers. Some toxic substances viz. carbon monoxide, polycyclic aromatic hydrocarbons and nitrogen dioxide are prevalent in library premises. Emissions of gases from binding materials, carbon black, toner cartridge and machinery heat can be hazardous to service operators. These are more proactive in the libraries of tropical countries like India. Thus increases risk of chronic pulmonary diseases, acute respiratory infections and carcinoma. Use of polymer resin, unprocessed leather, burning candles, tobacco smoking, electrical burnings, waste electronics and disposables are injurious to health – just oppose the concept of green library.

Anatomical hazards

Both long-standing and long-sitting posture in a confined workplace (i.e. sedentary nature of work in libraries) might be a cause of physiological disorders like neuromuscular, endocrinal and gastro-intestinal problem. Inappropriate posture at work may cause low-back-pain syndrome; which could be a cause of rheumatic disorders and scoliosis. Viral infections and many other contaminated diseases create a substantial burden in library workplace. Repetitive Strain Injuries (RSI), fibromyalgia, tendonitis, spondylitis, and Carpal Tunnel Syndrome (compression of the median nerve in the forearm) usually arise from repetitive task, postural misalignment and awkward poses while using ill-fitted equipments for a long period.

Emotional-hazards

Incidence of workplace violence or user assaults is quite common in libraries, usually emanates from inappropriate behavior and misconducts of violent patrons. So the working at front-desk of library can be a lot of emotional stresses with conflicts, as patrons come to the library in different moods. Besides that, cultural gap between user and staff as well as varied mannerisms create several conflicts. Even silly matters like sleeping, eating, gossiping, shouting, using mobile at the reading zone arise too many cross-talks. Conflicts may also crop up for overdue fines, reserve sequence, online access, lost books, stringent rules, inadequate facilities and services – so as to make library-staff unhappy, worried and depressed. Monotony and boredom may also impose sentimental injuries to a library staff.

Organizational-hazards

Specific organizational culture and practices might impose disparities with mindset. Thus varying philosophy or perception makes the library staff hazardous and create difficulties to survive socially and otherwise. Some organizations pay much attention to their libraries, while others neglect their library staff; thereby creates psycho-social hazards. Therefore inequality within libraries, partiality with library-staff, underestimation to a cadre, humiliation to efficient staff, deprivation and misjudgments could have severe impacts on employee morale. However the organization-specific discomfort caused by unusual practices, unhealthy working conditions, overload due to manpower failure, interpersonal relationships and displeasure in career opportunities forms the library environment unhealthy. Thus library workers in India used to bear the professional stress by virtue of their occupation.

Techno-hazards

Modern technology, newer software tools and complex method of information delivery often produce a number of psychosomatic illnesses including trauma (fear from use), stress, and fatigue. Thus technological revolution has prompted the occurrence of techno-stress among staff and patrons. Prolonged and unscientific use of computer peripherals (maladjusted terminals, mouse, screen resolution) in a daily basis leaving the library staff vulnerable to risk of visual deficiencies and musculoskeletal disorders (RSI, fibromyalgia, tendinitis, spondylitis, and CTS). Close exposure to electro-magnetic fields, radio-frequency tags, laser

beam and emissions of radiation, ultra-violet light for a long hour might lead to severe health problems.

Future studies

Invariably this work has revealed much information that can be used to library managers in formulating proper strategies. However this study would certainly be indicative for conducting library surveys relating to occupational health and safety in different gesture. It can stimulate further studies on establishing more vibrant practices in a variety of library environments. The author is earnestly suggesting to the professional colleagues for conducting a Census of Libraries focusing health hazards; which could help statutory bodies toward setting-up standards and follow up actions. Such a venture can be made separately for public libraries and for the libraries belong to higher-learning academic institutions in India. Indeed case studies at the local level can easily be reckoned to safeguard the library workers from hazardous environment in their workplace.

Conclusion

Centuries back, libraries were used only by monks. Gradually, libraries started becoming a centre of learning throughout the world. With time, its novelty transformed the libraries into a temple-of-scholarship. Today, libraries act as a surrogate in the knowledge-driven society and perhaps the most important central facility of any academic institution. Like many other workplaces, occupational health hazards are quite common in libraries. As such, occupational health and safety problems have been affecting library professionals over the past few decades. The situation is more acute in India and the libraries of India are very much prone to occupational hazards.

Occupational health is indeed a key element in achieving sustained good working conditions and having a safety culture. This paper reveals the impact of occupational health and safety in library workplaces. It also entails how library workers can reduce the risk and injury by ensuring appropriate protective strategies. Thus it will guide for lessoning an unnecessary burden to the library workforce in India. However this work will be effective for creating best practices toward establishing a safety culture in the library environment. Safety culture might be observed through a provision of safety information, carrying out safety inspection, and training. Besides that, proactive approach on the part of management by adopting standard norms and practices could minimize the occupational risk of injuries at work.

Occupational safety is expected to improve with the emergence of a more sensitive workforce in libraries. Yet, judicial activism and formulation as well as implementation of 'Occupational Health & Safety Act' in libraries could be more effective for accelerating positive changes. Apart from that, safety practices with good ambiance and creation of an aesthetic environment within the library, sound organization culture, indoor air quality, ergonomically designed equipment, healthy working conditions, welcoming attitude of staff, and related policies might be useful to deal with occupational health in libraries of India.

It is hoped that the review will be useful to library professionals to know about occupational risks and injuries. Policy-makers may be able to formulate proper strategies for vibrant practices; and researchers may take up further health hazards in a variety of library environments.

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