

## Current Practices and Concepts in Marine Occupational Health and Heavy Engineering Industry in China - A Review

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### ABSTRACT

*China is a fast-expanding nation, and the last 30 years have seen enormous social and economic transformations. The effect of these changes was severe, which has been reviewed in this article. The article explains that these changes have led to a meteoric increase in occupational disease cases. For example, the health of those who work on ships is vulnerable to various risks. Security in the workplace should be provided to all workers as a fundamental decency. Poor working conditions, particularly in developing countries, remain, notwithstanding the widespread adoption of fundamental safety procedures. The quality of occupational hygiene and safety at a given workplace significantly affects the health of its employees. Many employees now face traditional and emerging dangers on the job due to recent developments in industrialisation, technology and globalisation. For instance, the manufacturing industry exposes workers to various health hazards. This article also explains that people from many walks of life are affected by issues related to occupational health. Safety on the job is still in a very precarious position in China. The writer has further explained China's maritime and heavy engineering industries in this article, examining their function, current trends and potential future obstacles. Occupational safety plans in China, which now rely heavily on technological solutions, must expand to include business and government-level stakeholders in preparing for and raising awareness of issues related to workers' health on the job in the future.*

*Keywords: Heavy engineering industry; occupational health challenges; marine; China*

### INTRODUCTION

China's tremendous economic and social upheaval during the last three decades has led to an explosion of new industries and their hazards. In 'international factory', problems related to employee health and safety continue to be a concern (Khan, 2021). Industrial diseases directly influence employees' health by adding to their total illness burden and may have a ripple effect on society, thereby decreasing corporate profits and social stability. In August 2017, more than 500 investigators and practitioners working in the field of occupational safety from China, the United States, and other countries gathered at the Beijing International Institute in Beijing, China, for which they established the same conclusion: employment diseases are an important barrier to the protracted advancement of social economy. Therefore, preventing and controlling occupational illness has become a significant public health and social issue for countries worldwide. Safety and health on the job are prioritised in China (Sasana, 2019). Many countries are facing significant issues and difficulties in occupational sickness prevention and treatment and the requirements of workers in this field are continuously increasing; as such, the demand for efficient approaches to enhance occupational health is vital and urgent. Countries across the globe are implementing a broad range of initiatives and policies to reduce the incidence of occupational illnesses. Business ownership education aims to foster the next generation of business owners. Instruction in business, or at the very least direction in the right direction, may help individuals launch successful businesses (Song, 2022).

In this article, the researcher has identified that occupational disease is a significant problem in China, like everywhere. The National Health and Family Planning Commission (NHFPC)

reports that since China's reformation and going to open in 1978, over 80 million instances of occupational diseases have been documented. China is still a developing country, yet it already holds several world records, including the most people and second biggest economy. Additionally, China's industrialisation, urbanisation and economic expansion over the past few generations have reshaped the country's industry structure and expanded the number of its workforce. By reviewing this article, we have seen that China's healthcare budget has been expanding. The Chinese National Bureau of Statistics reports that in 2016, healthcare spending was \$700 billion or 6.2% of GDP. Several methods for preventing and treating occupational diseases have been used to treat industrial pneumonic plague, occupational toxicosis and dermatoses (Ulucak, 2018). Occupational illness in China threatens workers' health, corporate prosperity, economic expansion and social order. Although China's workplace health has improved substantially in recent years, the country still faces tens of thousands of new cases each year.

This article has also explained the broader concept of the government's role in improving employee health and management. In 2002, the Congress passed a law requiring businesses to take steps to ensure their employees' safety and health on the job by conducting periodic health screenings and offering other preventative measures. In a previous work Van de Elst (2018), states that the China's fight for improved circumstances is far from end, and government protections are not helping much. About 128 new instances of occupational illness were recorded in China in 2009, and only 20% of elevated businesses in the nation took any preventative measures. Numerous factories continue to dismiss potential threats to employee health and safety presented by these elements.

## CRITICAL EVALUATION OF THE ARTICLE

### OCCUPATIONAL HEALTH

Seafarers risk injury while on the job, like when a mooring line snaps and causes a fall, and off the job when they are more likely to be injured by a slip, trip or fall. The maritime industry also has a disproportionately high number of workers with severe mental health concerns. An article (Fyffe, 2016) analysed 20 studies published between 1960 and 2009 and showed that an average of 3.1%–18.0% of all fatalities among marine workers were the result of suicide. According to the World Health Organisation, suicide accounted for 1.4% of all fatalities in 2015. Suicide rates amongst sailors are higher than the overall average. However, (Zahoor, 2021) reported that among individuals they evaluated, 20% had suicide ideation, 25% had depressive symptoms and 17% showed anxious symptoms. The anxiety of mariners is four times more than that of oil and gas workers. Crew members with mental health difficulties, including depression, stress and suicide ideation, are more likely to sustain injuries and diseases. Workers' fatigue significantly threatens their health and safety within the shipping industry. The International Marine Organisation said again in 2019 that fatigue is a danger to maritime safety, health and the ecosystem. Given the 24/7 nature of maritime transportation, seafarers must work shifts. Boarding ships with suitable numbers of workers, scheduling frequent personnel changes and giving chances for sea duty are all recognised as safety management strategies that may prevent fatigue-related mishaps (Juan, 2022).

In context to the chosen article, the work demands, severe weather, unsafe situations on board, psychological and social hazards and difficulty in management are only some of the many variables that contribute to occupational hazards in the marine business. This article has explained the privilege of psychological issues among employees, which cause them to be cut off from social circles. A company is vulnerable to risks such as a blame culture, ineffective safety communications due to job uncertainty and desertion overseas. Problems of a social

nature are notoriously hard to foresee and include piracy, war, disputes, bribery demands and unjust treatment in port nations. The chosen article states the most common issues associated with people. Mental health issues are more common among sailors because of isolation, depression, lack of sea duty and being away from loved ones (Dumrongpokaphan, 2018). Sailors' 'low' mood may be attributed to several factors unique to the ship, such as lack of shore leave, excessive workload and unhealthy eating habits.

Moreover, half of the sailors (52.1%) said they felt 'down' after being denied a shore leave. To stress the importance of shore leaves, (Fyffe, 2016) questioned sailors. Even if these sailors do not get to spend much time with their families back home while they are on shore leave, the prospect of discovering a brand-new continent is almost sure to put a smile on their faces.

Workers in the agriculture industry have a significantly increased probability of experiencing adverse health effects on the job compared with the overall population. The likelihood of peasant employees receiving adequate assistance in their battle with occupational illnesses is low because they belong to a socially deprived class. As a result of the rapid pace of urbanisation in China, a growing number of people from rural areas are seeking employment in the country's major cities rather than remaining on their family farms. The number of peasant employees in China is expected to reach 280 million by the end of 2016, which is a growth of 4.5 million in the previous financial year. Furthermore, more than 50% of this group is employed in sectors that pose significant risks to their occupational health. In recent years, peasant workers have been recorded as victims of about 80% of all cases of occupational illness.

At present, China does not have a firm foundation for the prevention and management of health risks in workplace. The country is also plagued by a severe shortage of occupational health care professionals, an inadequate capacity to observe work-related illnesses and dangers, a dearth of valuable tips on occupational health hazards and growing demands to optimise current standards, compliance standards, academic research and engineering support for occupational safety (Mccaffrey, 2018). All of these problems contribute to the nation's predicament. The general population of China also lacks knowledge on the significance of taking precautions to safeguard their health while working. Regrettably, not all companies and municipalities appreciate the significance of preventing and managing occupational illnesses, which may result in an insufficient amount of resources invested by these entities for occupational health.

Regardless of the additional complication introduced by the proliferation of occupational health risks, the management and management of occupation-associated diseases are already difficult tasks. The prevalence of these dangers increases from coal and non-ferrous metal mining to information technology and biotechnology and healthcare, from metropolis to the suburbs to the countryside and from the biggest to the smallest firms (Fyffe, 2016). Tunnel sickness, cervical degenerative discs and lumbar vertebra illness are examples of new occupational disorders that have surfaced as a direct result of the fast growth of many new sectors. Second, these illnesses are expanding to rural and underprivileged regions as well as to small and mid-sized businesses, leading to difficulty in implementing occupational safety regulations universally, which is one of the compounded issues.

## CHALLENGES TO CHINA'S OCCUPATIONAL HEALTH

The chosen article deeply looked at the challenges associated with the occupational health of China. To adequately prevent and manage occupational illnesses in China, the country must first conquer several barriers. The Chinese government has recently implemented the National Plan for Occupational Disease Control and Prevention and the 13th Five-Year Plan for Effort Health Hazard Detection and Control. Due to their widespread exposure to hazardous working

conditions, Chinese employees bear a disproportionate share of the global incidence of occupational sickness. Approximately 30,000 new instances (and growing) of occupational illnesses are recorded annually, affecting a large portion of the workforce. More than 30 distinct industries have documented occurrences of occupational illness; in particular, extraction of fossil fuels such as coal, chemical manufacturing and construction industries are responsible for the great majority of these instances (Gai, 2017).

By reviewing the selected article, we can explain the lack of clarity on the employers' duty to provide a safe and healthy work environment for its workers. Organisational commitment is still low among central superintendents of certain employers, despite progress made in improving conditions for workers, providing workers with personal protective gear and incorporating occupational medicine performance reviews to ensure the health of employees of commoners and implemented workers. However, not all firms follow the law's requirement to provide occupational health examinations, services and retraining to employees who are often exposed to hazardous conditions. Neither the resources nor the structure can be used to monitor workplace health adequately. To begin, a significant chasm exists between widespread health hazards at work and inadequate level of control (Kang, 2019). In addition, several areas have significant deficiency of experienced professionals responsible for ensuring a safe and healthy workplace. Secondly, the government and business management agencies in China are not doing their jobs regarding keeping tabs on and auditing workplace safety and health.

The reviewed article has studied and concluded that China lacks a strong foundation for avoiding and regulating occupational health threats. The article identifies a growing need to improve occupational safety regulations, regulatory issues, academic studies and engineering and construction. However, qualified individuals remain severely scarce throughout the nation. The primary reason is the lack of awareness regarding the significance of workplace health and safety. The article explains that not all firms and localities appreciate the critical significance of preventing and managing occupational illnesses. Hence, not all of them spend sufficiently on occupational health (McCaffrey, 2018). The availability of resources for preventing and caring for occupational illnesses is regrettably unknown to many employees, particularly farmers. Occupational health suffers from a lack of financial support for study and advisory services. Conclusively, the chosen article stated that China's growth and layout of healthcare institutions are imbalanced, despite the country's critical need to expand the scope and effectiveness of its occupational health offerings. The reviewed article explains that a significant number of employees, particularly peasants, are uninformed of the available resources to prevent and control occupational disorders. Funding for study and technical support are lacking in the field of occupational health. Although China has a critical need to improve the quality and number of its occupational health services, the nation's growth and structure of health care institutions is imbalanced, causing difficulty to meet this requirement.

## OBJECTIVES AND TASKS OF OCCUPATIONAL HEALTH IN CHINA

In the selected article, the objectives and tasks have been specified, and positive impacts on China's occupational health have been recorded. This article explains that the National Strategy for the Prevention and Control of Occupational Diseases strives to better equip businesses with the resources they need to identify and eliminate potential health risks in the workplace and provide monitoring systems for employees. The primary goal is to establish employer responsibility for workplace health and safety. More than 85% of primary sector enterprises are mandated to report on projects posing risks to employee health under this strategy. Over 85% of workplace risks are expected to be regularly detected, and over 70% of significant businesses need occupational health regulators and personnel (Nakai, 2017). More than 90% coverage is needed for occupational health screenings for employees at risk owing to their

professions, and more than 95% coverage is required for occupational health training for company directors and topmost managers. Over the next several years, more than 90% of hospitals and clinics will be obligated to track the radiation exposure of their staff members.

Describing another objective, the researcher of the selected article explains that a solid framework can be established for preventing and managing occupational illnesses. A flawless joint league structure of occupational illness management and prevention at the province, municipal and county levels in China requires the involvement of at least one healthcare and medical organisation in each city with subsidiary regions. Ideally, a network for evaluating and delivering services linked to employees' health on the job would include a minimum of one hospital or clinic in each county devoted to assessing and treating employees affected by occupational illnesses (Khan, 2021). China intends to monitor critical occupational illnesses in at least 90% of any counties and divisions to enhance occupational sickness tracking and further strengthen the system that monitors diseases in the workforce and ensure quality records of work-related diseases.

## DISCUSSIONS AND FINDINGS

The selected article explains that China should be concerned with preventing and treating occupational illnesses where they start: in the workforce. Exploring occupational health hazards on such a national level will provide essential information on the types of enterprises, territories, areas of the economy and employee demographic trends that are particularly at risk. Process improvements can be implemented to transition out or heavily restrict the consumption of harmful in technology solutions, methodologies and components in favour of modern, safer alternatives. Mining activities, non-ferrous material mining, metallurgical, construction and chemical manufacturing are all high-risk industries that need to take extra precautions to safeguard against severe illnesses, such as occupational respiratory disease and poison attempts (Shen, 2015). These industries must also address the underlying causes of workforce health hazards and be encouraged to upgrade their latest technology and preventative and monitoring systems.

The selected article describes the objectives of the occupational health systems clearly. It explains that China must increase its regulatory control, administrative procedures and law enforcement to adequately safeguard employees' health. To achieve this goal, the following strategies are suggested. Attempts to improve essential occupational health monitoring, particularly in smaller governmental departments, such as counties and townships, will be ramped up via improvements in mover advantage and the construction of industrial hygiene supervision and administrative mechanisms. The other goals described in the reviewed article are as follows: increasing the number of businesses that take on legal requirements in occupational healthcare monitoring and trying to encourage big businesses to properly manage the occupational health of their workforce in high occupations, including agricultural production and public transit, as well as broadening the field of view of health and security inspections in the organisation or trying to expand the direct connections of staff members to amenities that would provide occupational health care services, medical diagnostics and eHealth services; and strengthening, supervising and inspecting industries, businesses, and construction projects with significant occupational health hazards and suspending or shutting down high-risk operations as necessary.

The selected article recommends that China must also formalise employer management of labour and employees, develop employment contracts in compliance with the applicable laws and exercise suitable disciplinary measures to push businesses to describe occupational health problems, such as protection laws currently offered to their workforce, the workplace environment as well as the prevention and oversight of workplace hazards (Fyffe, 2016).

Developing a system associated with peer and collaborative contract terms that are provided with a link to well-being and safety here on the job is crucial for industry sectors to exercise appropriate guidance, monitoring and pressure on corporations to pay their necessary premium increases on time and entirely for occupational injuries liability coverage and constructing and utilising a state-wide occupational health registry, we can enable employees and companies to begin taking their occupational health commitments sincerely, especially in private corporations.

Keeping good collaboration between occupational injuries insurance, primary, affordable healthcare, long-term disability insurance, medical assistance, socioeconomic charitable organisations and insurance schemes to guarantee sick people with effort diseases have prompt treatment opportunities and reduce medical costs following the law (Zhang, 2020). Throughout all industries, fostering positive social involvement in occupational health services, increasing the availability of these offerings and innovation to better meet the needs of employees and employers are paramount.

## CONCLUSION

Given the role, trends and challenges of occupational health in China, the country is doing great things for the occupational health of the marine and engineering industry. The reforms implemented and the health and security facilities being provided are suitable, as identified by the Chosen article. This article also explains that the industrialised world is looking to developing economies, such as China and India, more and more because of the enormous untapped investment opportunities and the massive pool of moderately priced labour available in these countries. The infusion of FDI has allowed these rising countries to launch massive infrastructure projects. To further lessen their dependence on local labour, many multinational businesses are setting up shops in these nations as manufacturers or service providers. Given the importance of a large and diverse workforce to economic success, emerging nations must prioritise occupational health. Some of the risks faced by sailors have been by the selected article: accidents, maritime catastrophes, piracy, poor potential treatments for high onboard stress, fatigue, isolation, infectious illnesses and exposure to hazardous chemicals. Despite improvements in workplace safety standards, a sailor's life remains risky, both at work and in leisure activities. Occupational health risks in the maritime industry may be reduced by directly and indirectly avoiding hazards at work caused by risky practices and toxic chemicals, psychosocial problems and lifestyle risks. Improving the standard of medical care and cleanliness on board is also essential by increasing crew members' exposure to first aid courses.

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