



OCCUPATIONAL SAFETY AND HEALTH CHALLENGES IN CONSTRUCTION INDUSTRIES: CASE OF MASVINGO CITY, ZIMBABWE

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ABSTRACT

Workplaces can have various undesirable social, physical and mental impacts on the wellbeing of workers. Thus, workers in Zimbabwe and the world over are exposed to numerous occupational safety and health challenges. The current study sought to examine the occupational safety and health challenges encountered by workers in the construction industry in Masvingo City, Zimbabwe. Research methods included key informant interviews and a questionnaire survey. The results from the study showed that there are numerous occupational safety and health being experienced in the construction industries in Masvingo city. It emerged from the study that the occupational health and safety in the construction industries in Masvingo City include: problems bones, joints or muscles, stress and depression, breathing or lung problems, heart and circulatory system related problems, eye problems, infectious disease, hearing problems and skin problems. It also emerged from the study that there are various causes of the occupational safety and health problems in the construction industries in the city. The causes include: lack of functional occupational safety and health management policy, poor condition of machines and equipment, insufficient Personal Protective Equipment, lack of training programmes, lack of attention to ergonomic/human factors and pollution and poor hygiene conditions. Various recommendations are suggested to minimise the occupational safety and health challenges in the construction industries in the city. These include: management commitment to introduce and implement an effective occupational safety and health management policy, maintenance of machinery and equipment, the regular supply of personal protective equipment, frequent training programmes on minimization of occupational accidents.

KEYWORDS: Construction industry, occupational safety, personal protective equipment, accidents, health, Masvingo.

1. INTRODUCTION

In total, it is estimated that more than 7 500 people die every day; 1 000 from occupational accidents and 6 500 from work-related diseases (Päivi *et al.*, 2017). This means that the workplace is a major determinant of the current state of the high levels of global mortality rate particularly in the less developed countries. Occupational safety and health is the science of the anticipation, recognition, evaluation and control of hazards arising from the workplace that could impair the health of workers, taking into account the possible impact on the surrounding communities and the general environment (Benjamin (2008: vii). This implies that Occupational safety and health is the protection of workers against illness, disease and injury related to the working environment. Occupational safety and health, thus, encompasses the social, mental and physical well-being of workers. This means that the significance of

Occupational safety and health for industrial development of a country is uncontested and fundamental. Research into the occupational safety and health challenges can provide an understanding of problems and opportunities for the development of the construction sector. The construction sector refers to all the businesses that build either houses and office buildings or highways and bridges, as well as those who do the specialized work of electricians, plumbers and masons, who are typically involved in the construction of all kinds of structures (Szymanski, 2006). The sector encompasses all activities based on the building, maintaining, and repairing structures. The current study examines the challenges encountered in occupational safety and health in construction industries in Masvingo City, in Zimbabwe. In pursuing the research objective, the study was guided by the following research questions:

- What are the workplace safety and health problems encountered in the construction industry in Masvingo City?
- What are the causes of the workplace safety and health problems in the construction industry in Masvingo City?
- What measures can be taken so as to mitigate the occupational safety and health challenges in the construction sector in Masvingo City?

Hazards arising from workplaces in the construction sector can impair the health and well-being of the workers; therefore, it is necessary to recognise and evaluate such hazards.

2. The study area

Before 1982, Masvingo was known as Fort Victoria. It is a city in the south-eastern part of Zimbabwe. The city is the provincial capital of Masvingo Province. The city is close to Great Zimbabwe, the national monument from which the country takes its name. The map, Figure 1 shows the location of Masvingo city in Zimbabwe. Masvingo city has a population of approximately 87886 (ZIMSTAT, 2012) and is located approximately 292 kilometres (181 miles) south of Harare. Numerous construction industries exist in Masvingo City. Some of

the construction industries are involved in infrastructure development. Infrastructure development in the city is composed of public and private physical improvements such as roads, bridges, tunnels, water supply systems, sewers, electrical grids and telecommunications. Although infrastructure development involves industrial construction which includes refineries, process chemical, power generation, mills and manufacturing plants, this branch of infrastructure development is largely lacking in the city at present. This is because currently manufacturing industries are not growing in the city. Industry has generally collapsed in the city following economic challenges the country has been facing since the turn of the century. This is in keeping with Zimwara and Mbohwa (2015) who observed that the Zimbabwean manufacturing sector is in limbo and that companies are operating below plant design installed capacity. Other construction industries in the city are involved in building activities. Building construction is usually divided into residential and non-residential (commercial/institutional). Buildings come in a variety of sizes, shapes, and functions, and have been adapted throughout history for a wide number of factors, from building materials available, to weather conditions, land prices, ground conditions, specific uses, and aesthetic reasons.

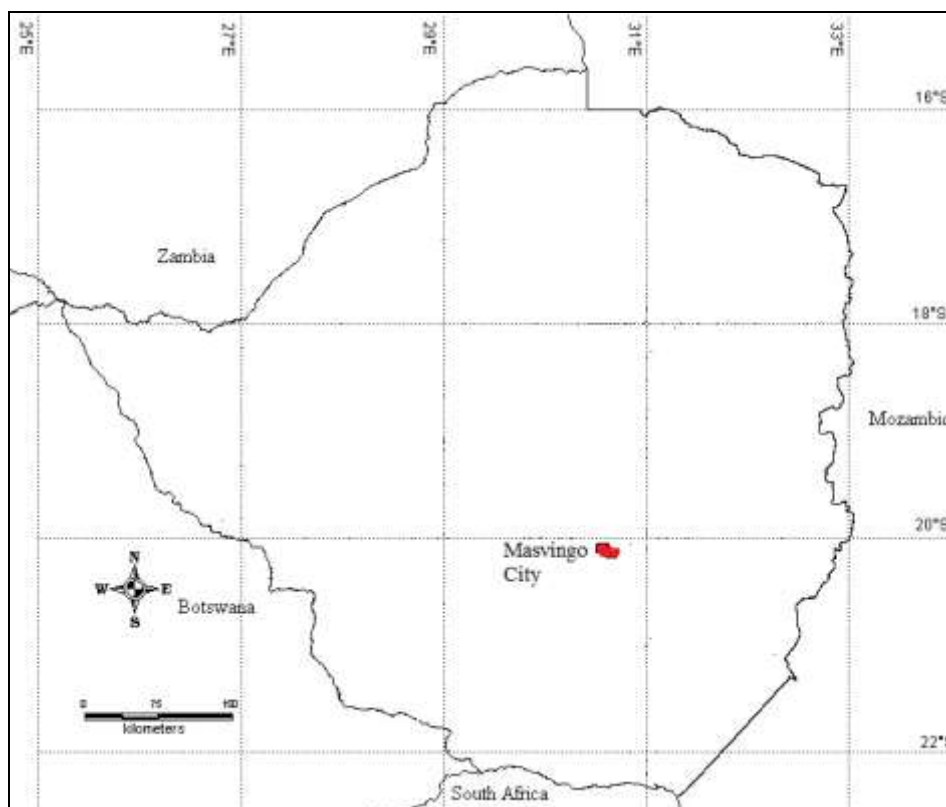


Figure 1: Location of Masvingo City in Zimbabwe (Source: Adapted from Musanga, 2009).

3. RESEARCH METHODOLOGY

Data collection instruments for this study included key informant interviews and a questionnaire survey. Key informant interviews were carried out with a manager from an infrastructure development industry of the

construction sector in the city and another one, a manager in the building industry. A total of 60 questionnaires were administered to the workers in the construction sector in the city of Masvingo to obtain data on the occupational health challenges. The researchers

made sure that the questionnaire design and layout was in line with Martin's (2006: 3) recommendations on questionnaire structure which include clarity and precision, no overlap on choice of answers, avoidance of bias in words or phrases, response alternatives explicitly stated and criteria of validity and reliability properly met by the questions.

These survey questionnaires were targeted at ordinary construction workers who are generally exposed to the occupational safety and health challenges. Stratified random sampling method was used to select respondents to take part in the questionnaire survey. The strata were identified on the bases of the type of construction industry. The types of construction industries (strata) identified were the infrastructure development industry and the building industry. Random sampling was then

used in each stratum to select the workers where questionnaires were to be administered. A total of 30 respondents were drawn from each stratum.

A mixed methods design was therefore, adopted as the strategy of inquiry in this study. The design uses both quantitative and qualitative methods. Quantitative and qualitative data was analysed to come up with a better comprehension of the problem and develop a complementary picture. This implies that the choice of such a mixed methods approach is dependent on numerous reasons. These include, inter-alia, viewing problems from multiple perspectives to enhance and enrich the meaning of a singular perspective and triangulate results to provide illustrations of context and trends.

4. RESULTS AND DISCUSSION

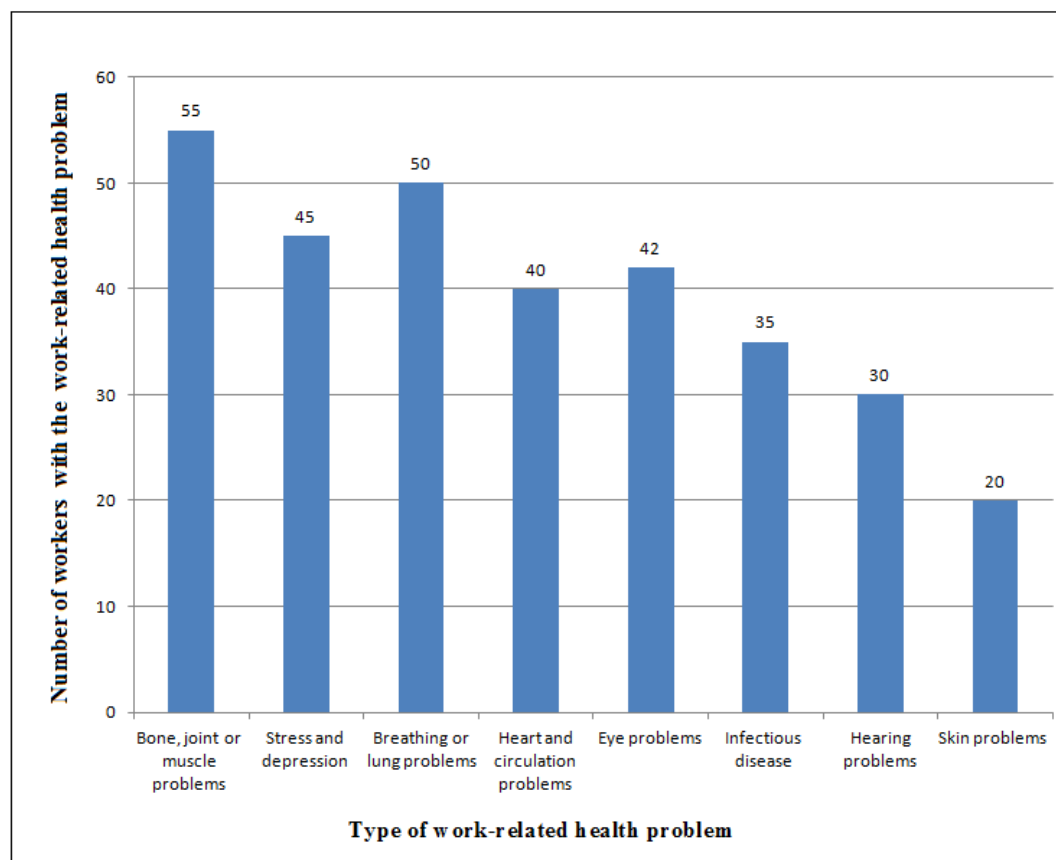


Figure 2: Occupational safety and health problems in the construction sector in Masvingo City.

Numerous occupational safety and health challenges exist in the construction sector in Masvingo city. Bone, joint or muscle problems emerged as the leading occupational safety and health challenge in the construction sector in Masvingo city. Figure 2 depicts the occupational safety and health problems being experienced in the construction sector in Masvingo city. As depicted in Figure 2, 55 out of 60 respondents, which constitute 92% of the respondents, indicated that they are experiencing bone, joint or muscle problems in the

construction sector in Masvingo city. Such a high percentage of occupational musculoskeletal problems can be attributed to the limited use of machinery in the construction sector in the city. This is in keeping with Kingsley, 2015, who argues that manual material handling is one of the leading causes of strains and muscle soreness throughout the construction industry. Strain and soreness emanate from repetitive bending during digging and lifting of loose material during shovelling. Breathing and lung problems were also one

of the occupational safety and health challenges mentioned by a very large number of respondents. As depicted in Figure 2, 83% (50 out of 60) of the indicated that they experience the problem. Stress and depression was indicated by 75% (45 out of 60) of the respondents, as given in Figure 2. The existence of such a high level of work related stress and depression is an indication that the work conditions are not good. Work-related stress (WRS) is experienced when the demands of the work environment exceed the employee's ability to cope with (or control) them. Seventy percent (70%) (42 out of 60) of the respondent's eye problems were also a problem which was due to lack of an effective occupational safety and health in the construction sector in Masvingo city. Almost the same percentage indicated the problem of the heart and circulatory system. The percentage for this was 67%. Infectious diseases were also being experienced by people working in the construction sector in Masvingo city. Thirty-five (35) out of a total of sixty (60) respondents mentioned infectious diseases as an occupational safety and health challenge in the construction sector. Hearing and skin problems were respectively mentioned by 50% and 33% of the respondents.

To a large extent, interview results concurred with what emerged from the questionnaires. The key informant from the infrastructure development industry of the construction sector in the city summarised the occupational safety and health challenges by indicating that:

"There are numerous occupational safety and health challenges that are being experienced in the infrastructure development industry in the city. The challenges include: problems of stress due to work overload, lung problems due to air pollution, heart

problems, infectious disease related to poor hygiene, hearing problems and skin problems."

The key informant from the building industry basically concurred with the infrastructure development industry manager but he further elaborated that falls are one of the most common causes of fatal and non-fatal injuries among building industry workers and that lack of proper safety equipment such as harnesses, guardrails, ladders and scaffolding inspection have led to numerous occupational hazards in the industry.

5. Causes of occupational safety and health problems in the construction industries in Masvingo City

There are numerous causes of the occupational safety and health problems in the construction industries in Masvingo city. As depicted in Table 1, 75% of the respondents (45 out of 60) indicated that the cause of occupational safety and health in the construction industries is lack of effective occupational safety and health management policy in the industries. Forty-three out of sixty (72%) mentioned that the poor working condition of the machines and equipment is the cause of the workplace accidents. A large number of the respondents (63%) attributed the cause of the occupational safety and health problems in the construction sector in the city to the inadequacy of personal protective equipment. Lack of training programmes on the importance of adherence occupational safety and health measures as a cause of workplace accidents was however, mentioned by a comparatively lower percentage. The percentage was 33%. Pollution and poor hygiene conditions and lack of attention to ergonomic/human factors were mentioned by 28% and 70% respectively.

Table 1: Causes of occupational safety and health problems in the construction sector in Masvingo City.

Causes of occupational safety and health	Number of respondents
Lack of functional occupational safety and health management policy	75% (45)
Poor condition of machines and equipment	72% (43)
Insufficient Personal Protective Equipment.	63% (38)
Lack of training programmes	33% (20)
Lack of attention to ergonomic/human factors	70% (42)
Pollution and poor hygiene conditions	38% (23)

The key informant from one of the construction companies succinctly summarised the causes of the occupational safety and health problems in the construction industries in the city by stating that: *"The major causes of workplace accidents in the construction industries in Masvingo city are pollution at the workplace, failure of companies to supply proper personal protective clothing, negligence of functional occupational safety and health system at numerous companies, poor working conditions of machines and numerous unsafe acts performed by workers"*. The response of the key informant did not deviate did not

deviate much from the responses from the questionnaires. Generally the findings of this study are in agreement with the views of Watson (2014) who argued that unsafe acts as well as unsafe conditions at the workplace such as failure of companies to supply proper personal protective equipment, lack of functional occupational safety and health system at numerous companies, poor working conditions of machines

6. CONCLUSION AND RECOMMENDATIONS

It can be concluded that, numerous hazards occur in the workplace in the construction industry in Masvingo city.

The hazards are found in a variety of forms, including chemical, physical, biological, psychological and non-application of ergonomic principles. The hazards have given rise to various occupational safety and health problems in the construction industry in Masvingo city. Among the occupational safety and health problems experienced in the sector in Masvingo city are problems of bones, joints or muscles, stress and depression, breathing or lung problems, heart and circulatory system related problems, eye problems, infectious disease, hearing problems and skin problems.

The study ends by suggesting some recommendations to minimize the environmental safety and health challenges in the construction industries in Masvingo city. The recommendations include:

- Management in the construction sector must take meaningful efforts to introduce and implement an effective functional safety and health management system. Awareness of the safety policy must be carried out to employees, so as to improve the safety policy awareness levels in the industries. There should be a Safety, Health, Environment and Quality (SHEQ) department in every construction industry in the city for the implementation of an effective environmental health and safety policy.
- Machines and equipment should be maintained in good condition so as to minimise occupational risks and accidents in the construction industry. A budget must be prepared annually to finance maintenance of machinery and equipment.
- There should be regular and frequent supply Personal Protective Equipment. Such Personal Protective Equipment is essential in minimising the occurrence of the occupational hazards. Whenever the Personal Protective Equipment is issued, training must be done about the usage of the materials and equipment otherwise such supply of the equipment can turn out to be a futile undertaking.
- Training programmes must be adhered for both management and other employees so as to reduce the occupational accidents. Trainings are required to ensure that the accident investigation and corrective action systems are effective. Potentially, information from past near misses and accidents needs to be entered into industry databases which are easy to retrieve when necessary. Regular reviewing of accident investigations needs to be undertaken so as to monitor the patterns and trends of the accidents at the industries.
- Machine and equipment must be guarded and inspected for efficiency in accordance with *Chapter 14:08 Factories and Works (Machinery) Regulations, 1976 (Amended by S.I.s 283/82 and 479/8.)*, that, all machines including driving belts, ropes, chains and sprockets must be guarded. Most equipment and machine systems in the construction industry are not completely guarded and this exposes employees to injuries.
- A series of hygiene and ergonomic surveys must be carried out at the construction industries. This implies that conditions of industrial hygiene, the level of noise, heat, light and dust must be properly monitored such conditions have a significant bearing on the conditions of health and safety of the worker. Related to this, workers should frequently undergo medical examinations as a method of monitoring the state of safety and health of the workers.

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