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Adherence to Health and Safety Measures in Building Materials Retail Shops: Experiences from Ilala District, Dar es Salaam, Tanzania

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Abstract

This article examines knowledge and practices of employers and workers about health and safety measures in building materials retail shops in Ilala District, Dar es Salaam, Tanzania. The article is based on quantitative data collected from 152 employers and workers from such shops. Structured questionnaires were used for collecting data. The data were analysed using Chi-square tests and Pearson's correlation. The findings revealed that a big majority of employers and workers in building materials retail shops are aware of health and safety measures, but exhibit poor health and safety practices. There is a collective sense of responsibility for ensuring occupational health and safety in the workplaces by employers and workers. Major obstacles for lack of adherence to health safety include financial costs for instituting health and safety measures, as well as limited knowledge and lack of monitoring and inspection systems. It is recommended that formal and appropriate knowledge can be acquired through formal trainings provided by OHS authorities.

Key Words: Health and Safety, Retail Shops, Knowledge and Practices, Tanzania

Introduction

According to the International Labour Organisation (henceforth ILO), it is estimated that more than 2.3 million people die of work-related accidents and diseases every year globally. About 350,000 deaths are due to occupational accidents, and the remaining 2.02 million deaths are caused by work-related diseases that correspond to a daily average between 5,500 up

to 6,300 deaths. In Africa, every year 54,000 workers die and 42 million work-related accidents occur and cause absence from work (ILO, 2014). In Tanzania the number of occupational accidents reported in 2003 and 2004 was 1,692 and 1,889 respectively. Six years later, according to the statistics released between January and June 2010, the rate of occupational accidents had increased almost ten times reaching a total of 11,223 accidents (URT, 2013). The rate of occupational accidents was on the increase despite measures for strengthening the legal framework to control the accidents. We are aware of the fact that Tanzania subscribes to international frameworks such as the global strategy on occupational health for all, Global Action Plan for workers' health 2008-2017 formulated by the WHO and the key principles of occupational health and safety by the ILO (URT, 2013).

While such accidents are disproportionately reported in all economic sectors, the Tanzania's private sector, including building materials retail shops, has registered the largest number of occupational accidents and diseases due to the fact that private sector operators have inadequate capital to run their businesses, or purchase protective equipment. The problem is exacerbated further by their poor training and insufficient knowledge of occupational health (URT, 2019). Additionally, most of the precarious jobs with the potential of causing significant damage to the health of the workers are associated with the private sector and informal employment (Quinlan, Mayhew & Boble, 2001).

The science for anticipation, recognition, evaluation, and control of hazards arising in or from the workplace that could impair the health and wellbeing of workers has gained prominence in recent decades (Alli, 2008). Occupational health and safety (OHS) is among the major public health issues. This could be associated with the recent growth in economy which has created new patterns of hazards as major causes of morbidity and mortality among the working population globally and Tanzania in particular (Onowhakporet al., 2017). The World Health Organization (WHO) and International Labour Organization (ILO) are constantly monitoring the situation and have continually emphasized effective implementation of occupational health and safety measures at workplaces (URT, 2013).

The literature reveal that the scope of occupational health and safety has evolved gradually and continuously changes in response to the social, political, technological, and economic situation. The globalization of the world's economies has resulted in great changes in the world of work in both negative and positive ways (Alli, 2008; Onowhakpor et al., 2017). In Tanzania, the development of the construction industry resulted in the

expansion of the construction sector providing9-11% of the employed workforce in the country (Mrema et al., 2015).

Looking at the nature of operations, there are three groups of people within the construction industry and these include labour suppliers, materials suppliers as well as the group of both labour and material suppliers. These groups experience occupational risks and hazards differently due to the nature of the materials they handle and the ongoing manual intensive activities within their workplaces (Janson, 2007; Matiko, 2013). The supply chain and handling of construction materials involves operators in retail shops before the materials reach the final consumers. As alluded earlier, given the informality nature of the retail shops, building materials are precariously handled and therefore it important to understand the knowledge and practice of the employers and their workers in building materials retail shops in relation to health and safety.

Operations in the retail shops for building materials mainly involve manual handling of various building materials like sheets, steel, and aluminum, tiles, paints, cement, and gypsum products which have the potential of causing harm if not handled safely (Janson, 2007). Both part-time and contracted workers in the retail industry are exposed to respiratory diseases, backache, diarrhoea, hearing difficulties, and skin and eye diseases (Mrema et al., 2015; Mwaisaka, 2013).

Health and safety measures recommended by authorities in Tanzania include registrations of workplace, safety provisions, health and welfare provisions, and safety special provisions at any workplaces including building materials retail shops (URT, 2003). Other measures include safe working procedures, designated area for loading and offloading, lifting and loading aid like a wheelbarrow, clean and dry floor, adequate light and enough air. Storing stock at a lower height, safe means of accessing goods like platforms steps and safety ladders, containers for waste materials, incident reports, good means of communication, and good means of handling cash are also recommended to ensure a health and safety environment in building materials retail shops (HSE, 2006).

Despite the existence of occupational health and safety authorities, directives, and standards in Tanzania, OHS services in the construction industry has remained ineffective. The construction industry accounts for 25% -45% of fatalities in Tanzania (Mrema et al., 2015). According to an audit carried out by OHS in 2012, fatality rates range between 0.1% and 24% across economic sectors. Of all the economic sectors, the construction sector has the highest fatality rate of 23.7% followed by transport (20.6%)

and mining (20.5%) (URT, 2013). The information about the magnitude of injuries and illness within the specific sub-sector of construction industry such as retail shops is scant. Similarly, we have less knowledge about health awareness and safety practice of the people working in this potentially dangerous economic sub-sector of retail shops for construction materials.

The nature of materials and ongoing activities in retail shops involving handling, loading, and storing materials expose employers and workers to high risk of getting injuries and illness (Janson, 2005; Othman & Rahma 2010). The workers are continually exposed to respiratory diseases, backache, diarrhea, eye and skin ill-health disorders (Mrema et al., 2015; Mwaisaka, 2013).

Inefficiency in ensuring OHS in the construction industry has been attributed to the expanding nature of the industry and the failure to follow site registration procedures for inspection purposes such that only 24% of workplaces are registered (Mkenda & Aikaeli, 2014). The unemployment challenge has also created high employment demands which affect the critical assessment of the working environment before a job-seeker ventures into the retail industry (Mrema et al., 2015; Othman & Rahma, 2010). Limited capital invested in the retail industry and limited understanding of occupational health and safety are reportedly jeopardizing the implementation of health and safety measures at the workplace (Mkenda & Aikaeli, 2014; Mwombeki, 2005).

Recent studies on the health and safety have mainly focused on patterns of accidents and diseases, analysis of the fatal accidents, cost of occupational-related health problems, comparison of risks among worker's groups in companies, policy-related matters and safety management, the status of health and safety in workplaces (Awodele et al., 2014; Ceyln, 2015; Thepaksorn & Pongpanich 2014; Unnikrishnan et al., 2015; Mrema et al., 2015). However, the nature of knowledge and practices of employers and workers regarding health and safety measures in building materials retail shops has attracted less attention. Additionally, it is worth exploring whether knowledge influences the nature of practice of health and safety measures in in the retail shops.

Issues of knowledge, attitude and practice have captured the interest of many researchers in recent years. A multitude of studies have been conducted to establish the linkages between knowledge, attitude and practice on various health matters. For instance, some studies have established the correlation between awareness and practice on COVID-19 protective measures (Alahdal et al., 2020; Al-Hanawi et al., 2020), health

knowledge and breast self-examination (Kwak, 2018). Other studies have focused on knowledge, attitude and practice in handling chemical hazards and the use of protective equipment among formally employed workers (Asgedom et al., 2019). Therefore, it is worth exploring knowledge and practice of employers and workers in the informal sector such as building materials retail shops due to its informality nature. The rationale is to reveal the knowledge and practice regarding health and safety and explain the forces that shape the practice of employers and workers in building materials retail shops.

Understanding the Connection between Knowledge and Practice on health and safety in Retail shops

The intersection between knowledge and practice in retails shops for construction materials can be comprehended by looking at the principles of Health Belief Model. The model helps to understand the role of an individual in understanding health behaviour. It also explains why people accept preventive health services, why they do or do not adhere to others (Champion and Skinner, 2008). It also explains how individuals change and maintain health-related behaviour by providing a guiding framework for health behaviour intervention (ibid).

The primacy and appropriateness of Health Belief Model in analysing health and safety related behaviours is well captured by the Rural Health Information Hub which elaborated that "the model defines the key factors that influence health behaviours as an individual's perceived threat to sickness or disease (perceived susceptibility), belief of consequence (perceived severity), potential positive benefits of action (perceived benefits), perceived barriers to action, exposure to factors that prompt action (cues to action), and confidence in ability to succeed (self-efficacy)" (RHIH, 2021). Additionally, the model has been widely applied in studying, for example, health knowledge and practices of health workers (Valley & Stallones, 2018), compliance with the use of personal protective equipment among waste water workers (Wright et al., 2019), describing factors influencing workplace safety practices (Ndep et al., 2020) and many other studies on health and safety at workplaces. Health Belief Model is very much focused on the rationality of an individual in weighing the barriers and benefits of a health behaviour. The model is sometimes criticized for overemphasising the rationality aspect and ignoring social norms or culture which also influence peoples' decisions (Taylor et al., 2007). However, the influence of culture on health and safety practices was not the scope of this

study therefore it is not the aim of this paper to explore the issues of health and safety in a cultural context.

Health Belief Model explains why people take action to prevent and control illness or conditions. Individual's likelihood to take action against potential safety threat in a retail shops would depend on perceived susceptibility to injury, perceived severity of the damage, perceived benefit of taking action against safety threat, and perceived barriers of taking action against safety risks.

The perceived susceptibility or proneness to accidents and injuries, influences the uptake of particular safety behaviour by an employer or employee when handling materials in retail shops. The belief is built around their understanding of risks and hazards within the specified workplace, protective measures to be taken, and the effectiveness of those measures. Contrary to this principle of the model, majority of workers and employers in building materials retail shops had the belief about the potential of contracting an illness and diseases, injuries, and being involved in accidents in their working environment but they were less adherent to the health and safety measures. Generally, workers and employees who had high level of awareness on health and safety measures they were also more likely to use protective gear in workplaces (Awodele et al., 2014).

Workers and employers in building materials retail shops with long working experiences had high knowledge of the health and safety measures compared to those who were new to the operations. These experienced workers and employers were expected to have high level of adherence to health and safety measures. To the contrary, despite having long working experience and perception on the possibility of contracting occupational illness and diseases, the majority of experienced workers and employers were less likely to take health and safety measures at their workplaces.

According to Health Belief Model, the effectiveness and helpfulness of a particular health action on reducing risks and consequences influence individual behavior toward particular health actions. The model maintains that the health action is undertaken even in an obstacle environment so long as it is thought to be effective and helpful (Dejoy, 1996). Availability of standard protective measure with less barriers in workplaces influence individual acceptance recommended health behavior for reducing health and safety risk. Employers and workers who had standard protective measures with the less physical discomfort of wearing were likely to comply with those measures in preventing risks and hazards that could occur in their working environment.

Retail workplaces run on limited capital and this could hinder the provision of health and safety requirements. Such workplaces are also less likely to consider health and safety matters due to the small size of enterprises, low scale operations, and less perceived health and safety risk (Mkenda & Alikaeli, 2014). Majority of employers were not seriously implementing health and safety measures on the grounds that they had less capital investment. Additionally, they considered their small retail workplaces as less risky environment compared to large construction sites whereas studies have shown that small workplace are risky than large workplaces (Mendeloff et al., 2006: viii).

Research Methodology

This paper is based on some quantitative data extracted from a broader descriptive study aimed at examining the knowledge and practices of employers and workers on health and safety measures in building materials retail shops in Ilala District, Dar es Salaam-Tanzania. Quantitative data were collected from 152 employers and workers of building materials retail shops who were selected by simple random sampling technique. Structured questionnaires were used to collect data from the employers and workers. The data were analysed using Statistical Package for Social Science (SPSS) for univariate analysis, Chi-square and Pearson's correlation statistical tests were performed to identify factors associated with health and safety knowledge and practices among workers and employers; and establishing the relationship between knowledge and practices.

A scale involving 26 items of health and safety measures was developed. The knowledge items included perception toward required measures, knowledge on working environment, understating of common health-related hazards and its causes. Items for health and safety practices included required health and safety practices, perceptions on required practices, barriers toward ensuring health and safety measures and measures taken when employers and workers are unfit to carry out work. The reliability of the scale was assessed and the scale attained the required a Cronbach's alpha coefficient level of .87 indicating that the scale had internal consistence for measuring all items (Pallant, 2011). The scale was further categorized into three levels. Respondents who mention 0-7 items were categorized as having poor knowledge/practice, respondents who mentioned 8-15 items were categorized as having average knowledge/practices and those who mentioned 16 items and above were categorized as having good knowledge/practices.

Employers and workers knowledge on health and safety measures

The level of knowledge on health and safety measures among employers was as high as 70.8% among employers and 64.4% among workers. Similar high levels of understanding on PPEs have been reported in Tanzania and Nigeria in the past (Mwaisaka, 2013; Awodele et al., 2014).

More than three quarter (85.7%) of employers with university education and half of employers (50%) with no formal education had average knowledge on health and safety. This knowledge seems to have been obtained indirectly from different sources because the majority of employers (89.2%) and workers (92.0%) did not attend any formal training on occupational health and safety. Such sources of information enabled employers and workers to have average health and safety knowledge. OHS Officers revealed that formal training on health and safety is normally provided to clients who are registered. Training was report to be provided through organizing workshops, dissemination of information through advertisements, and in few instances the officers make direct physical visits to some workplaces to provide awareness and knowledge on health and safety matters. The Officers also reported that most of the building materials retail shops are small unregistered workplaces. Most of the workers in these places of work are casual labourers. Because of their informality nature, these workplaces are rarely visited by OHS officers for inspections and educational visits designed for improving employers' and workers' knowledge on OHS matters.

The level of understanding of health and safety measures among employers and workers in building materials retail shops is insignificantly informed by formal OHS training but largely informed by other means such as education system and informal channels. Small workplaces such as building materials retail shops therefore, expose workers and employers to health and safety risks unlike big workplaces which are regularly inspected (Awodele et al., 2014; Esaiyas et al., 2018). However, there was no significant difference in terms of level of knowledge among employers with or without formal training on OHS. About 70.7% of employers with no formal OHS training had average health and safety knowledge compared to 71.4% of employers with formal OHS training. For the workers, 65% of workers with formal OHS training had average health and safety knowledge compare to more than half (57.1%) of workers without OHS training. This difference in the level of knowledge and attendance of formal training on OHS is statistically insignificant ($p=0.677$). Attendance of formal training on OHS does not have significant influence on the level knowledge.

Age was found to be a significant factor as far as the issue of knowledge on OHS is concerned. The results revealed a positive correlation between age and safety knowledge of employers and workers, (r=0.182) and (r=0.099) respectively. With the increase of age, employers and workers tend to be more familiar with health and safety matters. Age has been observed to be an important factor for acquisition of knowledge on OHS even other African countries like Nigeria (Onowhakpor et al., 2017). Similarly, there was a positive correlation between working experience and health and safety knowledge of employers and workers, (r=0.158) and (r=0.224) respectively. With more years of working experience, employers and workers tend to become knowledgeable on health and safety measures probably through different sources of information like workshops, exhibitions, mass media, and events gathering and interacting with OHS officers.

Perception of health and safety measures and health-related hazards

All employers and workers had the perception that OHS measures were important in their working environment and more than half of them (55%) agreed that their working environment is inherently associated with hazards. It was widely acknowledged by OHS officers that all workplace have certain nature of health risk depending on the nature of the work. As similarly observed by Mwaisaka (2013), most of the health-related problems mentioned by employers and workers included back pain, joint pain, muscles pain, cut of fingers, broken arm or leg, bruises, respiratory infections and eye diseases. These health problems were either witnessed or personally experienced by the employers and workers at their workplaces. Regarding the mentioned health-related hazards, employers and workers recognize their causes in different ways.

The unavailability of PPE was mentioned by 83.1% of employers followed by poor storage of materials by 60% and limited capital mentioned by 46.2% of all employers. Almost three quarter (74.7%) of workers mentioned PPE, 69.0% of them mentioned limited capital, and 52.9% of workers mentioned poor hygiene as a major cause of health-related problems. Lack of PPE during the process of handling materials and poor storage of materials are known causes of health-related hazards (Meleko et al., 2017).

Health and safety practices among employers and workers

Majority of employers (80.0%) and workers (92.0%) had poor health and safety practices**.** There was a wide discrepancy between their knowledge on OHS and practices among employers and workers in building materials

retail shops. Contrary to the predictions of Health Belief Model, the understanding of health and safety measures did not influence employers and workers to practically implement health and safety measures. Small workplaces are rarely inspected by OHS inspectors but still there is a misalignment between OHS systems and the nature and reality of operations in small workplaces like building materials retail shops (Eakin et al., 2010). Proper implementation of OHS requires identification of sources of risks, robust efforts for OHS led by senior managers, decisive and deliberate development of knowledge and skills but most of these are practically impossible given the nature of work in building materials retail shops (Bluff, 2017).

The association between sex, marital status, formal OHS training, occupational status, and health and safety practices were investigated. Of all these variables, only occupational status (employer/employee) and health and safety practices revealed statistically significant differences ($p=0.031$). The study findings indicated that 80% of employers had poor health and safety practices and 20% had average health and safety practices compared to 92% of workers who had poor health and safety practices and 8% had average health and safety practices. Therefore, being an employer or worker in building materials retail shops influence the likelihood of adhering to health and safety practices with employers likely to implement safety practices than their employees. However, it is worth noting that the workers are mostly involve in risky activities like manual handling of building materials than their employers and therefore they should be having safe practices even than their employers (Poulsen et al., 1995).

The study also revealed a positive correlation between working experience and practices taken by employers and workers to ensure health and safety in building materials retail shops, ($r=0.170$) and ($r=0.134$) respectively. This implies that with the increase in years of working in the building materials sector, employers and workers tend to be more aware of the specific health and safety practices and adherence to health and safety practices increases.

There was also a positive correlation between knowledge on health and safety measures and practices taken by employers and workers to ensure health and safety in building materials retail shops, ($r=0.276$) and ($r=0.220$) respectively. Knowledge and skills on occupational health and safety is an important factor for compliance to occupational health and safety and public requirements (Nshuju, 2012) although some instances there could be a mismatch between knowledge and practice (Wanjiku, 2015).

Barriers among employers and workers in ensuring health and safety practices

The implementation of health and safety practices was reported to be facing a number of impediments. Almost half the number of employers (44.6%) agreed that measures taken were sufficient for protection against hazards compared to 29.9% of the workers who had the same view and this difference on the appropriateness of health safety measures was statistically significant (p=0.002). While the employers are not in constant contact with potentially harmful building materials compared to the workers, they were contented with the protective measures in place than their employees who considered the measures as inappropriate. It was found that revealed employer did not prefer further strengthening of the measure for fear of cost implications. Employers were also concerned about their limited capital, knowledge and guidelines for maintaining health and safety in retail industry.

Employers associated poor implementation of health and safety practices in building materials retail shops with lack of clarity of guidelines, their poor understanding of health and safety issues, and limited capital for implementing the measures and this most common in developing countries (Seoke & Kamungoma-dada, 2014; Alkilani et al., 2013). Financial constraints, lack of awareness, and resistance to change are frequently reported as the main barriers towards health and safety practices (Unnikrishnan et al., 2015). Employment patterns especially those based on casual labour rather than permanent employment pose great challenge towards implementation of health and safety practices (Alli, 2008; Alkilani et al., 2013).

Health and safety responsibilities among employers and workers

A big majority of employers (72.3%) agreed that all people involved in the operations were responsible for ensuring health and safety measures compared to (36.8%) of workers who had the perception that employers and workers were responsible for addressing health and safety issues.

Ensuring health and safety measures in retail shops is perceived as being the responsibility of employers, workers, government, and other stakeholders. This collective sense of responsibility is important for collective measures of insuring health and safety unlike the situation is some African countries like Malawi where majority of workers had the perception that safety in the construction industry was the duty of site managers (Chiocha et al., 2011). As correctly observed by Leukusye, it is dangerous if the responsibility of

health and safety is left in the hands of the contractor alone, with total less concern for the client and other key stakeholders (Lekusye, 2016). Improvement toward adherence to health and safety measures in building materials retail shops requires cooperation between employers, workers, government, and other stakeholders.

Despite of the understanding of the responsibilities toward health and safety practices, employers and workers are facing different limitations. Lack of promotion on health and safety matters, poor follow up of employers/OHS officers and limited capital/market competition were the major limitations mentioned by the employers and workers in building materials retail shops in performing their health and safety responsibilities effectively. Weakness of legal and operation arrangements have been singled out as bottlenecks hampering the development of good health and safety practice (Alkilani et al., 2013). Additionally, market competition between small and medium enterprises and lack of awareness contribute significantly to poor health and safety practices at workplaces (Unnikrishnan et al., 2015).

Conclusion

Employers and workers have an average knowledge of health and safety measures required in the workplace. This limited awareness of health and safety measures is partly associated with poor health and safety practices. Formal training on occupational health and safety for employers and workers is also limited. Such training is vital as it has the potential of improving health and safety knowledge and practice in building materials retail shops.

Health and safety practices in retail shops for building materials is poor despite the fact that employers and workers have average understanding of OHS matters. Health Belief Model predicts that individuals are likely to comply and maintain health action in the presence of a few obstacles. Employers and workers in building materials retail shops face different barriers such as limited guidelines toward health and safety matters, limited understanding, limited capital, and resistance to change on the side of employers. All these obstacles can be overcome if all stakeholders play their part. Employers have to be cognizant that investing in OHS measures is important for prospering of their business and the health of their employees. While the responsibility of upholding health and safety measures is borne by employees and employers, the government authorities have the responsibility for provision of the right education on health and safety and putting in place systems for inspection and monitoring health and safety matters in building materials retail shops.

The challenges and risks of unemployment for workers outweigh the perceived risk of working in the environment with poor uptake of health and safety measures. Measures taken to ensure health and safety in building materials retail shops are insufficient for protecting workers and employers against harm. More efforts are required to address barriers and promote ways of creating decent and safe working environments in building materials retail shops.

Despite existing challenges toward adherence to health and safety practices, employers and workers recognized that it is important to have preventive and protective measures to ensure a healthy and safe working environment. The collective sense of responsibility for ensuring health and safety measures in retail shops for building materials is a good indicator in the sense that if all other challenges are addressed, a safe and healthy working environment is achievable.

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