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EXPLORING OCCUPATIONAL HEALTH AND SAFETY PRACTICES IMPLEMENTED IN FILLING STATIONS, MASERU, LESOTHO

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ABSTRACT: *Compliance with occupational health and safety is essential to ensure the protection of workers, their families, and the customers' well-being. Moreover, it improves the business image, its productivity and avoids incurring unnecessary costs related to compensating for occupational diseases and hazards occurring in the filling stations premises. The study employed the quantitative approach and a cross-sectional study design was used. All-inclusive sampling was used on 50 participants. The findings of the study indicated that 88.9% of employees can use fire extinguishers and 72.2% can use the spill kit. Most filling stations provided employees with proper Personal Protective Equipment. Research in this field has not been conducted to much of a degree in Lesotho, which made this study priority and a need for the field of occupational health and safety in the country.*

KEYWORDS: Occupational health, occupational safety, practices, filling stations.

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INTRODUCTION

Occupational safety and health is the science of anticipation, recognition, evaluation, and control of hazards arising in or from the place of work that could impair the health and well-being of workers (Alli, 2008). Workers around the world are faced with various kinds of workplace hazards including but not limited to psychosocial, biological, physical, and chemical agents (Ekpenyong & Asuquo, 2017). Over the years, there has been a global increase in petrochemical firms, including the emergence of many gasoline stations, to meet the increasing demands of a fast-growing population and because of globalization, urbanization, and accelerated economic development (Ekpenyong & Asuquo, 2017).

The World Health Organisation estimates that only 20% to 50% of workers in industrial countries, and fewer than 10% of workers in developing countries, have access to occupational health services. Developing programs for improved work practices is one of the occupational health services playing a pivotal role in ensuring the health and safety of the employees in workplaces (Forst, Nickels & Conroy, 2009).

According to the International Labour Organization, at least 2 million of the estimated 2.7 billion workers die every year from work-related ill health and injuries, about 160 million people suffer from work-related diseases (WRDs), and about 270 million fatal and non-fatal work-related accidents occur each year (Ekpenyong & Asuquo, 2017). Work-related ill health caused by exposure to chemical agents has become a major concern in the workplace.

Furthermore, exposure to petrochemical industries such as fuel stations increases the vulnerability of the front-line workers due to its integration of highly toxic compounds (Qafisheh et al., 2021) and the International Agency for Research on Cancer (IARC) has classified both petrol and petrol engine exhaust as possibly carcinogenic to humans (Qafisheh et al., 2021; Rota et al., 2018).

Exposure to chemical hazards in the workplace is affected by public policy, regulation, mechanical controls, and administrative and behavioral measures like systems of work, supervision, and training. Good Occupational, Social, and Health and Safety (OSHS) practices should be used by the employers and employees to control risk, minimize exposure and protect the health of workers and non-workers, who are at risk of exposure (Kuranchie et al., 2019).

The implementation of the OSH programs in filling stations has not been critically examined in Lesotho. Therefore, it is essential to investigate the implemented occupational health and safety practices in filling stations to protect employees from injuries, illnesses, and accidents in the workplace, amongst others.

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LITERATURE REVIEW

Safety Knowledge of Petrol Attendants at Filling Stations

Safety knowledge is the degree of employees' knowledge of organizational safety systems, practices, and procedures. The management holds the delegation to improve work safety while the employees must comply (Zhang et al., 2017). The study of occupational safety and health management systems and compliance among petrol stations in Kenya, and the study of assessment of safety practices in filling stations in Ile-Ife, Southwestern Nigeria both show that all respondents, 100% and 93% respectively, were aware of the occupational hazards associated with their job.

The workers should take responsibility for their individual and collective safety by practicing safety measures at all times in their workplaces. Organizations must invest rigorous interest in ascertaining the required safety knowledge and its association with specific hazards for employees (Liu et al., 2022); this is achieved by subjecting workers to training leading up to their employment. According to Zin (2012), health and safety training significantly improves knowledge and behaviors related to workplace safety. Workers get to know the layout of the workplace and how to use the necessary equipment and also how to safely use any personal protective equipment (PPE) such as gloves, safety footwear, and goggles (Mutungi, 2020). As a result, this helps workers to develop safety awareness and take corrective measures to prevent unsafe practices when performing tasks; it also creates a conducive environment in which workers are neither injured nor made ill by the type of job they perform.

As safety requires the control of hazards and risk exposures, safety knowledge is the ability to understand these safety controls and act accordingly (Naji, 2021). Control practices may include effective use of different PPE and a study in Kenya concluded that only 6.7% of workers reported the use of PPE with the most commonly used being an apron or overall and the least being gloves and face masks. Though the majority of respondents had stated that PPE was provided by the employer, the low usage was because their availability was only ‘on need basis’ during offloading which was considered to be hazardous while some studies show that there is a lower utilization of PPE among workers due to it being uncomfortable (Mutungi, 2019).

A study by Okafoagu (2017) indicated that the knowledge of petrol station attendants regarding occupational safety and health stood at 59.0%, with only 30.7% aware of the existence of any type of PPE and only 7% reported using it in the study conducted in Uyo, Nigeria. The number of attendants that form the 7% of those that use PPE may be due to their conscience while those not utilizing do not realize its importance, which may be due to lack of knowledge. Lack of knowledge is the major predictor of workplace accidents; therefore, it can be assumed that effective safety knowledge management improves safety behaviors, hence a good accident prevention tool (Dita, 2019).

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Availability of Occupational Health, Safety, and Environment (HSE) Policies in Filling Stations

Filling stations are extremely hazardous workplaces that store and administer services related to highly flammable fluids such as paraffin, diesel and gas (Liu et al., 2020). The occupational health, safety and environment policies that must be available at the filling stations are those related to: identifying the potential hazards, mitigating those hazards, and curbing occupational diseases and accidents through employees engagement strategies such as training and retraining where the need arises (International Labour Organisation, 2022). Moreover, record documentation of employees' training initiatives and statistical data related to occupational accidents and diseases must be kept as a reference (International Labour Organisation, 2022).

Filling stations must have policies that can identify risks that are synonymous with their workplaces. As per the International Labour Organisation (ILO) (2022), documenting and recording all health events and accidents that arise at the workplace assists in better anticipating and diagnosing potential occupational safety and health hazards. Therefore, there must be annual reports that are related to the occupational safety and health events that occurred during the year at the filling stations.

According to Article 58 of Consolidation of Labour Laws (CLT), work hours should not exceed eight hours daily and the Basic Conditions of Employment Act (BCEA) states that working hours should be nine hours per day, excluding lunch breaks. Every employer in Maseru petrol stations must regulate the working hours of each employee as per the provisions of any Act governing occupational health and safety as it is usually ignored by employers. According to Mutungi (2019), negative incidents that occurred at the filling stations were attributed to a worker being exhausted or overwhelmed by work due to working for long hours (averagely 10 hours). When workers work for long unregulated hours, this could result in physiological risk factors whereby there are repetitive movements of the same kind that are harmful to their health.

Workers come into contact with various customers with different attitudes, as stated by Johnson (2018); amongst the hazards reported included confrontation from customers at 52.1%. This implies that most of the workers at one point or another fell victim to violence from customers; this is therefore a call for their employers to root out the problem through training on how best to deal with customers and hire security.

METHODOLOGY

The study employed a quantitative approach and a cross-sectional study design was used. All-inclusive sampling was used on 50 participants but only 36 participants participated in the study. The questionnaire with close-ended questions was administered to the respondents at filling stations and the checklist was used to assess the use of equipment such as Personal Protective Equipment (PPE), the condition of first aid and spill kits, and fire extinguishers.

The data collected was analyzed using Statistical Package for the Social Sciences (SPSS) to conclude whether the filling stations have implemented OSH practices to protect employees.

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The data analyzed included the responses from the petrol attendants, materials and the measures available meant to enhance the compliance of occupational health and safety in the filling stations.

Permission to conduct the study was granted by the National University of Lesotho Internal Research Board and the filling stations management at the study setting. Participants provided written consent and voluntarily participated in the study. Participants were allowed to withdraw from participation at will and the data from interview records was kept confidential.

RESULTS

Table 1: Socio-demographic Characteristics of the Respondents

Measurement	Variable	Frequency % (n=36)
Age (Years)	21-30 years	50.0
	31-40 years	38.9
	41-50 years	8.3
	50+ years	2.8
Gender	Male	61.1
	Female	38.9
Educational Level	Primary school	16.7
	High School	44.4
	Diploma	30.6
	Degree	8.3
Period of Employment	Less than 5 years	55.6
	Between 5 and 10 years	36.1
	More than 10 years	8.3

Table 2: Occupational Safety and Health Practices

Measurement	Frequency % (n=36)	
Knowledge on Occupational Hazards and Safety	Yes	97.2
	No	2.8
Training	Yes	72.2
	No	27.8
PPE Use	Yes	97.2
	No	2.8
Ability to Use Fire Extinguisher	Yes	72.2
	No	27.8
Ability to Use Spill Kit	Yes	88.9
	No	11.1
Working Hours	6-8 Hours	22.2
	8-10 Hours	63.9

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	More than 10 hours	13.9
Medical Certificate	Yes	58.3
	No	41.7
Hazard Reporting	Yes	100.0
	No	0.0
Confrontation from Customers	Yes	97.2

Most of the participants (97.2%) knew occupational hazards and this is consistent with the research by Kakwi (2020), which demonstrated that 98.0% of the respondents were familiar with workplace safety practices. Approximately 72.2% of the attendants were enrolled in a training program before employment, which is a major health and safety program required to protect employees against occupational hazards and this assessment corroborates the findings of Kakwi (2020) which deduced that 63.0% of the attendants were trained before employment. However, a study conducted by Mutungi *et al.* (2019) found that 51.7% of employees were not trained upon employment.

Moreover, medical fitness certificate was requested from around 59% of the participants upon their employment while the majority of the respondents (81.1%) in the study conducted in Kenya did not undertake medical fitness test before employment (Mutungi *et al.,* 2019). Working hours showed 64% of the respondents worked for 8-10 hours per day, 23% for 6-8 hours, and 13% worked for 10 hours during their shifts. The findings are in line with those of the study conducted by Mutungi *et al.* (2019), which found that 86.7% of employees worked between 8-10 hours with some 5.6% working for more than 10 hours. Working for more than 8 hours could lead to accidents in the workplace, especially because workers are fatigued and concentration levels are low.

Concerning routine work practices, 97.2% of employees agreed to utilizing personal protective equipment (PPE) while performing their tasks. Only 60.0% and 71.4% of the respondents used PPE in the studies conducted by Mutungi *et al.* (2019) and Okafoagu *et al*. (2017) respectively. The majority of the respondents (72.2%) were able to use fire extinguishers and even in the study conducted by Kakwi (2020), results indicated many (99.1%) participants were able to use fire extinguishers.

The knowledge of how to use a spill kit was recorded at 88.9% of the respondents; while a study by Kakwi (2020) reported the ability to use a spill kit was 64.6%. Confrontation from customers was experienced by 97.2% of the respondents while it was experienced by 52.1% of the respondents in a study conducted in Uyo, Nigeria (Johnson & Umoren, 2018). All of the attendants (100%) said they reported all occupational hazards, risks, and accidents that happen in their line of work to their superiors while those under the Kakwi (2020), 71.2% did not report to their superiors.

Approximately, 78% of the filling stations under study had well-maintained fire extinguishers that were easily accessible and had the appropriate amount of ABE powder of 2 by 9 kg in reserve as well as safety needles. Sixty-seven percent (67%) of the petrol stations had well-equipped spill kits while 33% lacked necessary materials of importance such as absorbent material. First aid kit availability was recorded at 67% of the petrol stations while in the study conducted in Kenya it was at 50.0% of the filling stations (Mutungi *et al.,* 2019). Signs and

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symbols along with security personnel were available at every filling station whereas in the study conducted by Mutungi *et al.* (2019), 65.0% of the filling stations had signs in the form of text or symbols.

DISCUSSION

More than half of the respondents of this study were young adults with only a small portion of just 2.8% being over 50 years. Filling stations are characterized by high economic activities that require the attendants to consistently administer different services as demanded by motorists. They involve a lot of back-and-forth movements that require people of this demographic area to be presumably healthy and more active as well as be able to endure all the physical stress that their work demands of their bodies.

Moreover, 61.1% of the respondents were males, demonstrating that there are more males than females working in the filling stations. This assessment is further supported by similar studies conducted in Kenya as well as Nigeria—76.1% (Mutungi *et al.*, 2019) and 75.0% (Kakwi, 2020) were males respectively. These further show that due to the intense physical demands of the work performed at filling stations, the proportion of males dwarves that of females. Furthermore, at least 75% of the respondents had either completed high school or a diploma with a small percentage only having made it to primary or in possession of a university degree. Similarly, Mutungi *et al.* (2019) research reported that close to 90.0% of attendants obtained a post-primary level education. The importance of having petrol attendants with high educational achievements stems from the ability of such attendants to practice occupational safety and health easily and use it to improve the safety and well-being of their health and fellow employees (Kakwi, 2020). Moreover, such employees tend to have a positive attitude and perceptions related to occupational health and safety due to understanding how it is essential in their line of work (Marta *et al.*, 2014).

Approximately 50% of the attendants were employed for a period of fewer than 5 years, and a study conducted by Johnson and Umoren (2018) also deduced that more than 50% of the respondents were employed for less than a year. Amongst the reasons associated with this assessment are that the workers became employed upon completion of their respective studies and people quit their jobs frequently due to the different demands entailed by their work, thus necessitating the need for regular recruitment (Johnson & Umoren, 2018). Regarding the knowledge of occupational health and safety, the majority of the respondents (97.3%) were positive that they had enough knowledge; this was determined by the ability of the respondents to outline workplace hazards related to their work, where fire was the most common hazard mentioned. This evaluation is supported by Mutungi *et al.* (2019) who concluded that 100.0% of the respondents knew occupational hazards where they at least described one hazard or risk.

Training before employment was attended by 72.2% of the respondents while a study conducted in Nakuru, Kenya showed that 91.7% of the petrol attendants were trained on the use of work tools and equipment before being employed (Mutungi *et al.*, 2019). Employers must engage their employees in training programs before employment so that they enhance occupational earth and safety in their workplaces; this is attributed to the workers having the ability to perform tasks related to their occupations diligently without causing potential hazards and risks to themselves and other employees. According to Mutungi *et al.* (2019), there must

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not only be training before employment but to enhance occupational health and safety, there must be job training and refresher courses. Approximately 72.2% knew how to utilize a fire extinguisher while 27.7% did not know how to operate it; this could stem from the lack of training that they may have not been afforded upon their employment. Lack of knowledge on how to operate a fire extinguisher can lead to occupational hazards being not contained before they cause devastating effects such as fire (Marta *et al.*, 2014).

Around 88.1% of the respondents could use a spill kit to manage spills in and around their workplace, this evaluation concurs with the assessment made by Kakwi (2019) where 83.5% of the attendants had the knowledge to use spill kits when petrol spills at the dispensing area. This is essential as it prevents potential hazards before they can occur, such as slipping and injuring themselves in the process, and it helps in avoiding the wash-off of petroleum products into the land and water bodies to cause land and water pollution. Concerning working hours, 63.9% of the respondents worked for about 8-10 hours and 13.9% above 10 hours. According to the Lesotho Labour Code Order, 1992, Part VII, 118 (1), the normal hours of work for any employee shall not be more than 45 hours per week. According to World Health Organisation (WHO), working for over 55 hours per week results in health conditions such as headache, stroke, heart disease, fatigue as well as stress. People can also be hazards at their workplaces especially workers with fatigue who are usually too tired to do the work without causing injury to themselves or others (Canadian Centre for Occupational Health and Safety, 2022).

Medical fitness was required from 58.3% of the attendants before employment while for those under the study of Mutungi *et al.* (2019) as well as Johnson and Umoren (2018), only 18.9% and 4.2% of the respondents underwent medical fitness respectively. A pre-employment medical examination is important for people with an existing chronic condition and it documents the health status of the employees before employment and will help in determining how their working environments affected their health (ILO, 2022). All of the respondents said that they reported accidents, hazards, and occupational risks constantly to their superiors which is important as it helps in documenting issues related to occupational health and safety performance of filling stations to identify areas that must be improved and control is adopted.

Moreover, reporting helps in monitoring and auditing procedures aimed at ensuring that the filling stations comply with the standards and policies set out by their licenses (ILO, 2022). Approximately 97.2% of the respondents had at one point or another been confronted by their customers both verbally and physically even though every one of the 9 filling stations had security personnel; these concur with a study in Uyo, Nigeria which showed confrontation from customers at 52.1% (Johnson & Umoren, 2018). Confrontation from customers can result in injuries, stress, and in the worst-case scenario death.

Each of the nine filling stations provided overalls and safety boots to the employees, thus enhancing their protection from certain hazards but none of the filling stations provided hand gloves for hand protection, whereas for the filling stations under the study of Johnson and Umoren (2018), safety boots (46.1%), overall (33.3%), and 20.3% were provided. All the filling stations under study had functioning security personnel as well as well labeled and visible hazard and safety symbols, 33.3% lacked a first aid kit, and 33.3% of the filling stations did not properly maintain their fire extinguishers. It is essential to have well-functioning first aid kit and fire extinguishers that are properly maintained to curb fires and treat injuries promptly.

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IMPLICATIONS TO RESEARCH

The findings of the research can help strengthen occupational health and safety in different work environments to protect both workers and the environment against occupational hazards and environmental pollution respectively. The study findings can inform occupational programs on practices to be strengthened to protect people, the environment, materials, and equipment.

CONCLUSION

In essence, the filling stations in Maseru comply with occupational safety and health practices that govern their operations in Lesotho. This is because the employers perform most of their responsibilities as stipulated by the Lesotho Labour Code Order 1992. This includes among others, the provision and maintenance of a working environment that is clean, safe, and without health risks, provision of training, supervision, and necessary information that enhances the safety and health of workers.

FUTURE RESEARCH

Future research must focus on the knowledge, practices, and perceptions of employees in the implementation of occupational health and safety programs in filling stations. Also, the research must focus on employers' role in implementing and promoting safety culture in the organizations.

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