Evaluation of health, safety and environmental status: A case study

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Chapter One
Introduction

The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) reported a growth in the RMG industry from 30 enterprises in 1980 to 4482 in 2016-2017. Conversely meeting the best compliance standards of the world, now in Bangladesh 150 factories are being prepared as green factories on the other hand more than 4,000 woven and knitwear garment factories are under pressure from their international buyers to improve their workplace safety to global standards by June 2018 (Akter, 2018)

The term compliance describes the ability to act under an order, set of rules or request, according to International Compliance Association (ICA). Compliance in the RMG industry ensures all labor rights and facilities according to the buyer code of conduct which also consider the labor and industry laws of the RMG producing country. The aim of compliance is to maintain strictly the labor law (Baral, 2010).

Occupational safety and health have been repeatedly mentioned as a fundamental right of every worker, and are referenced in the Alma Ata Declaration on Primary Health Care, the WHO constitution, the UN's Global Strategy on Health for All, the ILO Convention and in many other multilateral conventions and documents along with the National Labor Law of Bangladesh. Health and safety are considered to be very important issues at workplace as they are intrinsically linked with the overall well-being of working people (Akran, 2015).

There is no "Occupational Health and Safety (OHS) practice in low categories factories (sub-contract factories, sub-contract for dyeing, printing factories) relate to the preventative, retaliatory and compensatory effects of laws which protect worker's safety and health. In order that, they are unable to reduce employee injury and illness related costs, including medical care, sick leave and disability benefit costs. "Occupational Health and Safety (OHS) in the garment sector relates to: temperature, noise, light, ventilation, machine, chemical, electrical, and fire safety; and ergonomics. Both employers and workers have responsibilities to contribute to a working environment free of health and safety hazards. There is no OHS training applies to both mid-level management and workers to raises awareness and reduces

workplace-related accidents, injuries and diseases. Poor wastage management practice which is a set of characteristic activities includes collection, transport, treatment and disposal of waste is warming for our environment. There is no act upon to prevention of waste production through in-process modification, reuse and recycling which is a formulation of reuse or material recovery. OHS management system is the structure of the management of all the parameters of Occupational Health and Safety. The guidelines and ways how the OHS parameters should be implemented in the factories are in the OHS management systems. It also includes the recoding of all events, incidents, training procedures, written program of safety and other OHS issues. To know about the standards and compliance requirements, the workers should be trained with full of details. The training should cover all the information about the facilities that they should get from the factories, operational training to run the production process smoothly, workers participation in the safety committee, training on first aid, firefighting, emergency evacuation etc. The social dimensions of the RMG industry are getting more attention from consumers, social workers, welfare organizations and international buyers. Now international buyers are demanding green factory. So, compliance with their "code of conduct" proved a major demand before placing order, where as some are accepting some fixed general standards of particular code of conducts. Casual enlistment, low education levels, wage separation, sporadic instalment, compel work and short contracts of administration are extremely regular practices in Bangladesh. Rented factory premises, narrow staircases, low rooftops, shut situations, nonattendance of lounges, drinking water and nonappearance of independent toilets or normal spaces for female specialists are different worries in facilities (ATM et al., 2018)

Many international buyers from the United States, European Union, Canada and elsewhere, consider that Bangladesh garments are produced in abusive and exploitative conditions which do not uphold labor rights and standards and acceptable working conditions (Haufler, 2013).

The displeasure by Bangladesh's garment manufacturers and government to lookout its own particular national laws has provoked international buyers to demand their own Codes of Conduct7 with local employers. Since the expiry of the Multi-Fiber Agreement Quota system in 2005, they have requested compliance with their own sets of principles before putting any garments import order, (Anner Bair and Blasi, 2012)

1.1 Background of the Study

Before getting to the main subject of occupational health and safety, it is important to look at the overall state of garment workers' health in Bangladesh, and their access to health care services. Workers come from various suburbs of Bangladesh and the villages. Their lower socioeconomic status, coupled with the lack of other viable livelihood options, puts them at a particular disadvantage while dealing with health related problems. Health needs to be looked at from the broader context of a worker's daily routine. Workers wake up early to cook for the family, commute long distances to get to work and back, skip breakfast and other meals to save time, drink less water to avoid visiting the restroom and work without pause to meet high production targets. Stress caused by abusive behavior from supervisors, the repetitive nature of their work and the occupational hazards that they face daily. Various occupational health issues, such as breathing problems and respiratory illnesses that result from inhaling cotton dust, are common in the industry. To make matters worse, garment units where these processes are involved are not classified under hazardous industries, according to an official from the Department of Factories, Boilers, and Industrial Safety & Health. Musculoskeletal problems like back aches, body, hand and leg pain are reported by the majority of workers as a result of repetitive work. Although major accidents are not common, minor accidents such as puncture wounds from needles are a daily occurrence.

The status of occupational health and safety in developing countries like Bangladesh is especially problematic, with workers bound to work in an unsafe working environment where there is little regard for safety issues and inadequate monitoring from any public or civil society agency. Poor safety and health record of locations where poor people are 'employed' also contribute to worsening the situation. Hence, occupational health and safety are very important irrespective of the type of employment, or size or sector or location of the workplace because of its strong connection with extreme poverty and wellbeing. The research provided consciousness about the existing health and safety condition in the Garments of Bangladesh. The study indicates how environmental components are affected by existing industrial operation (ATM et al., 2018).

1.2 Objective of the study

The specific objectives of the report were-

a) To identify the present condition of the employee's health and safety environment of Shine Embroidery Ltd.
b) To compare the present condition of the employee's health and safety environment of with relevant laws.
c) To identify some deviations regarding employee's health and safety with the laws and provide some recommendations to improve employee's health and safety environment of the selected factory.

Chapter Two

Literature Review

The displeasure by Bangladesh's garment manufacturers and government to lookout its own particular national laws has provoked international buyers to demand their own Codes of Conduct with local employers. Since the expiry of the Multi-Fiber Agreement Quota system in 2005, they have requested compliance with their own sets of principles before putting any garments import order (Anner *et al*., 2012).

One of the first in 1992, when a public scandal followed a report in the Washington. Post about the production of Levi Jeans by Chinese prison labor in the Island of Saipan. Levi Strauss immediately reacted by drawing up a code on labor standards (compliance) for all of its overseas suppliers. Wal-Mart, a major US company, was one of the first retailers to establish a comprehensive code in 1993. Compliance in RMG has various benefits such as: Gets higher price of products, free from labor unrest, reduce worker turnover rate, increased worker morality, increased productivity, increased product quality, have global image and global recognition for their performance, good public or community relation, improved government-industry relation, satisfaction of the buyer requirement, can work directly with reputed buyers, have consistency in order (Kundo and Nahar, 2014).

As there is no contract or appointment letter, millions of garments workers are vulnerable to losing their jobs at a moment’s notice without benefits. The end of an employment relationship is probably going to be passionless and hopeless experience for a specialist and loss of pay gravely influences his or her family. Furthermore, gender issues in majority of garments production lines are undermined causing work instability, sporadic wage installment, hardship of the lowest pay permitted by law and advancement introduction. In fact compared to other employment sectors in Bangladesh, job insecurity is higher in the RMG sector. The RMG wage level is one of the most minimal on the world. Most of the garments factories do not have standard working hours also forced labors is common in Bangladesh. Despite the fact that most work until subsequent to night, there are no security measures for them and no residential facilities or transportation offices gave. Late or sporadic wage payments are normal in the sector. Generally, the greater parts of the industrial facilities do not

give any pay slip. The processing factories, which give pay slips, don't have straightforwardness. It isn't extraordinary for pieces of garments workers to be expelled without payment following a while of committed work. (ATM *et al*., 2018)

Hazards in the garment industry include accident hazards, such as burns and puncture wounds, physical hazards, such as heat and noise, chemical hazards, such as allergies, ergonomic hazards posed by poor posture, biological hazards from poor nutrition, and psychosocial ones that result from abuse on the part of supervisors and a depressing work environment. All of these are inter-related, and can affect both productivity in general and the individual health of the worker. Thus, in most cases, workers do not create hazards - hazards are built into the workplace (Padmini and Venmathi, 2012).

Some of the common causes of accidents in the garment industry are poor housekeeping, heavy manual lifting and inadequate use of Personal Protection Equipment (PPE). According to one study conducted in Bangalore, puncture wounds were the most common type of accident (48.3%), followed by incised wounds (28.1%), blunt injuries (13.5%), burns (5.6%) and foreign bodies (4.5%). Incidents of accidents during the study period were 2.49/1000 workers, with about half of those injured being tailors (S and B, 2006)

Exposure to cotton dust causes irritation in the upper respiratory tracts and bronchi, which after prolonged exposures slowly progresses to chronic obstructive pulmonary disease. Besides all garment industries have dust problems. Dust fibers mainly produced from cutting and sewing sections of garment industries can be seen on workbenches, lamps and even workers hair. The smallest of these fibers are breathed in by the workers and, over the long term, cause a variety of respiratory problems. The problems are made worse as many industries use brooms and dusters to clean the workplace rather than use of industrial vacuum cleaners which simply spreads the dust and dust control is often made worse as workers do not wear their dust masks in the correct fashion. Moreover, workers are not informed of the dangers associated with their work, or the precautions to be taken while handling chemicals (Padmini and Venmathi, 2012).

In Bangladesh, garments workers work in a hot and warm humid environments in the production space mainly in sewing section because of lack of proper natural ventilation system, no consideration of factory building envelop construction

materials, large number of workers and use of various machineries. Being uncomfortable is not only the major problem with working in high temperature and high humidity, but also workers who are working in a hot environment may face additional hazards to their health and safety (Nawrose Fatemi, 2012).

Poor housekeeping is not only an accident hazard because of boxes, thread, trimmings and other combustible materials lying around the shop floor, but also because of dust which, when combined with poor ventilation and the poor quality of masks, can lead to respiratory problems. Inadequate use of PPE can either be the result of guards that are missing from machines altogether, or of the discomfort workers experience while using them. Workers claim that the use of PPE hinders the meeting of high production targets. The Factories Act places emphasis on work safety, lighting, temperature and ventilation, cleanliness, disposal of wastes and effluents, dust and fumes and overcrowding, among other things. These aspects do not receive adequate attention in many garment factories in the country. Lack of general training on health and safety, specifically first aid training, is another common anomaly that compromises worker safety. While the Factories Act provides for annual medical examinations for hazardous industries, the classification of the garment industry as non-hazardous has made the situation worse for workers (Chaturvedi and Kumar, 2015).

The occupational health and safety service in Bangladesh is still in the developmental stage. Here, the occupational health & safety refers mainly to the workers of industries but does not completely cover all occupations of t5he country. The main laws related to occupational health and safety in this country in the factory Act 1965 and the factory Rule of 1979. There are a number of other laws and regulations that are also have some provisions related to occupational health and safety. For certain work environment factors, manufacturing process, machineries and toxic substances, the levels of concentration of substances in the air have been recommended by various international organization and agencies. Which are considered to be safe, are implemented in the respective countries. Lack of work environment standards and exposure limits for different hazards and lack of requirement for periodic structured objective driven medical examination are the major deficiency of the legislations in terms of occupational health and safety. Regarding the compliances of labor laws in most the cases there is non-compliance of the laws. The non-compliance of the ILO conventions. Because the labor legislations in Bangladesh were prepared in-

conformity with ratified conventions. Country's constitutions and in considering the socio-economic conditions. Therefore, non-compliance or non-implementations of labor laws have short-term and long-tern effect on the economy of Bangladesh. However, certain adverse effects for non-compliance of conventions and legislations may be estimated in the following:

a) The work place environment in factories and mills will turn into hazardous which may cause accidents and incidents.
b) All accidents and incidents create human sufferings, having direct or indirect costs on the productivity and profits.
c) The hazards, which are prevailing in the industries e.g. electric short circuit in the garment industry, fire in the garment industries are responsible for the occurrence of injuries and diseases, are mostly the outcome of the absence of good working conditions, absence of protective and preventive measures. Poor housekeeping etc.
d) The direct cost of preventing hazards in much smaller than the indirect costs of accidents and illnesses. Cost benefit analysis of an accident may give a clear picture of various items of loss. The productivity as well as the profitability of any industry largely depends upon how far the measures have been taken to prevent and illnesses in the industry.
e) Therefore, the lack of implementations of legal provision i.e. the non-compliances of the ILO conventions in the work places not only cause less of the workers, it causes a huge loss to the employers and the nation as a whole (Roy and Rikta, 2015)

Rashid and Rashid, (2015) found that sample organization does not follow all the provisions regarding health, hygiene and safety of workers as per the Bangladesh Labor Act 2006 amended in 2013.This study found out that the organization does not ensure the prescribed space for every worker in a work-room; there is no emergency exit and fire exit; all the dangerous machineries are not securely fenced; the company does not thoroughly examine every part of cranes and other lifting machinery regularly, which may cause accident; the company does not follow the schedule to examine every hoist and lift thoroughly by competent person; the latrines, washrooms, dust beans and spittoons are not clean at all times.

The most common health problem attributed to their occupation by garment workers was the incidence of musculoskeletal disorders (MSD). This was also the primary cause for workers seeking medical attention (Joseph and Kiran, 2008).

Padmini and Venmathi, (2012) found that there were some psychosocial problems among the workers. These arise out of frustration from the monotonous nature of the work, the risks involved, long working hours, a lack of recognition for their work, a lack of job satisfaction, daily abuse by male supervisors, the absence of welfare activities, and tensions at the home and at the workplace.

Apart from the psychological toll it takes, work related stress can also have a significant impact on the incidence of cardiovascular diseases, such as hypertension. Neurological problems like frequent headaches, hand tremors and peripheral neuritis are often the result of continuous work (Joseph *et al.*, 2011).

The poor quality of food provided at canteens, combined with inflation, tends to lower worker's calorie intake. The need to meet production targets forces workers to cut short lunch breaks, or even skip them altogether. They often do not drink enough water in order to avoid going to the restroom. This predisposes them to Urinary Tract Infection (UTI). No concession is usually made by the management for gynecological problems such as menstrual irregularities, vaginal discharge, excessive bleeding and lower abdominal pain. The management at these factories is predominately male. Thus, a general lack of education and awareness, the absence of organized unions at the workplace, unresponsive governmental institutions and poor sanitation and nutrition tend to aggravate workers' health and safety problems. Periodic medical surveillance and a responsive grievance mechanism at all levels could stave off potential hazards at the workplace (Chaturvedi and Kumar, 2015).

Many researchers have investigated working conditions in the Bangladesh garments industry. In fact Working conditions in the RMG sector are below standard and do not meet the ILO standards. Labor standards and rights are commonly ignored in the RMG factories in Bangladesh: poor practices include the absence of trade unions, informal recruitment, and irregular payment, sudden termination, wage discrimination, excessive work, and abusing child labor. Moreover workers suffer various kinds of diseases due to the unhygienic environment and a number of workers are killed in workplace accidents, fires and panic stampedes. Absence of an

appropriate mechanism to ensure the enforceability of the available laws for protecting workers' rights and maintaining workplace safety continues to be a concern in the RMG sector. As the sector is an important foreign exchange earning component, some changes are required (Begum, 2016).

One of the first in 1992, when a public scandal followed a report in the Washington. Post about the production of Levi Jeans by Chinese prison labor in the Island of Saipan. Levi Strauss immediately reacted by drawing up a code on labor standards (compliance) for all of its overseas suppliers. Wal-Mart, a major US company, was one of the first retailers to establish a comprehensive code in 1993. Compliance in RMG has various benefits such as: Gets higher price of products, free from labor unrest, reduce worker turnover rate, increased worker morality, increased productivity, increased product quality, have global image and global recognition for their performance, good public or community relation, improved government-industry relation, satisfaction of the buyer requirement, can work directly with reputed buyers, have consistency in order (Kundo and Nahar, 2014).

The scope of compliance for luminous environment is the lighting system with relation to the building, lighting controlling system, power allowance (luminaire wattages), lighting ballast distance, etc. (ASHRAE, 2004). Compliance assurance by RMG sectors is becoming vitally important in apparel business, as consumers of developed countries are becoming increasingly concerned about work and social environment in the sourcing factories. Compliance standards of RMG units varied widely in respect of size of operation and type of compliance. Factory level compliance standard is relatively better than social compliance (Rahman, Bhattacharya and Moazzem, 2008).

In Bangladesh, garments workers work in a hot and warm humid environments in the production space mainly in sewing section because of lack of proper natural ventilation system, no consideration of factory building envelope construction materials, large number of workers and use of various machines. Being uncomfortable is not only the major problem with working in high temperature and high humidity, but also workers who are working in a hot environment may face additional hazards to their health and safety. Environmental factors such as ambient temperature, humidity, wind, and sun exposure may alter the risk of HRI. Along with these, an

individual‘s physical activity level, hydration level and amount or type of clothing may also increase the risk of HRI (FDH, 2011). The thermal comfort factors of working environment at RMG factories are responsible for heat-related illness of its workers (Nawrose Fatemi, 2012).

Maintaining the workplace thermal environment within the range of human tolerance ensures the health, safety and efficiency of the worker. Temperature in places of work is governed by the Health and Safety in Employment act in 1992. This act is used to prevent harm to employees at work. To do this, it imposes duties on employers, employees, principals and others, and promotes excellent health and safety management by employers. It also provides for the making of regulations and practice. Employers have the most duties to perform to ensure the health and safety of employees at work. Employers have a general duty to take all practicable steps to ensure the safety of employees. In particular, they are required to take all practicable steps to: provide and maintain a safe working environment, provide and maintain facilities for the safety and health of employees at work, ensure that machinery and equipment is safe for employees, ensure that working arrangement are not hazardous to employees, provide procedures to deal with emergencies that may arise while employees are at work. Employees must have an effective method to identify and regularly review hazards in the place of work. They must determine whether the identified hazards are significant hazards and require further action. If a an accident or harm occurs that requires particulars to be recorded, employers are required to , be investigate it to determine if it was caused by, or arose from a significant hazard (Matsas et al., 1997).

Relative humidity has a significant and direct adverse effect on health when high humidity is combined with high temperatures. This combination reduces the rate of evaporative cooling of the body and can cause considerable discomfort or lead to heat stroke, exhaustion, and possibly death (Arundel *et al.*, 1986). Both very low and high relative humidity may cause considerable discomfort, as the relative humidity of the air directly affects temperature perception (Mcnall, 1986). Extremely low (below 20%) relative humidity may also cause eye irritation (McIntyre, 1978) and moderate to high levels of humidity have been shown to reduce the severity of asthma (Strauss *et al*., 1978).

Increased noise level with the technological advancement becomes a serious problem in the textile industry and it has become a crucial occupational hazard to its workers. Maximum noise level of some textile machines is as high as 95dB and locating many machines inside a single room causes to increase the cumulative noise level by at least 5dB beyond maximum noise level of a machine (Jayawardana, Perera and Wijesena, 2014)

Noise can harm animals and the environment, as well as physical property. Livestock and pets are harmed by noise, as are animals in the wild. Noise related property damage includes structural damage from vibrations induces by sound waves and economic harm in the form of lower property values. The true social costs of noise pollution include monetary losses from sickness, absenteeism, loss of productivity and earning capacity, and much more. Noise pollution is not new, but it has become more problematic with the developments associated with industrialization and urbanization. Between 1987 and 1997, community noise levels in the United States were estimated to have increased 11% were predicted to continue increasing at that rate or more (Staples, 1997)

Negative effects of noise on human beings are generally of a physiological and psychological nature. Hearing losses are the most common effects among the physiological ones. It is possible to classify the effects of noise on ears in three groups: acoustic trauma, temporary hearing losses and permanent hearing loss (Melamed, Fried and Froom, 2001).

Among the Environmental compliance in Bangladesh, recommended Illumination condition RMG sector is one of them that must be ensured. The illumination condition includes the quality as well as quantity of the lighting. But in the production space (such as cutting sampling, sewing, inspection, dyeing, ironing , spot removing, packing, etc.), harmful human health impacts can result from poor environmental quality inside buildings (Wilson and Corlett, 2005).

Poorly designed maintained lighting systems can result in glare and flicker that may cause vision problems. On the other hand, appropriate quantities of light are essential, but quality issues are just as important in providing a comfortable and safe working atmosphere. When lighting meets the needs, it adds better working performance and productivity. Visual comfort for various illuminations has impact on total physical comfort condition and physical discomfort influences the human behavior and their

works. The visual comfort of these workers becomes a significant issue which is based upon determining the suitable range of illumination levels and glares available on the work plane of the user. Local visual comfort standards and guidelines for improving the illumination conditions in these production spaces should be established for incorporation in the sustainable design process (Hossain and Ahmed, 2013).

The recent study by Majumder, (2003) and Mridula (2009) also revealed that the more prevalent illnesses among the garment workers were headache were headache, general anemia, weakness, fatigue, poor appetite, vomiting tendency etc.

Padmini and Venmathi, (2012) found that the work environment in garment industries in Tripur is unsafe and unhealthy and the workers were exposed to dust, chemicals mainly in the form of solvents, ergonomical problems, psycho social problems etc.

Shakula and Rao, (2015) found that the temperature was high in the cutting and sewing sections. The illumination level was poor In all the sections through it were numerically within the permissible range. Also found that the workers are exposed to cotton dust, poor ventilation, and congested work area, and the workers are exposed to health related illness such as heat stress, heat stroke, eye strain, headache, dizziness, etc.

Zohir and Paul-Majumder, (2007) found that About 54% of the women workers reports that they were having eye trouble after joining the garments industry. Of the male workers, about 42% complains so. The eye trouble were more prevalent among the male workers aged 20-24 years, among female workers aged 25-29 years, whose total service in the garments was more than 3 years. Also found that the eye trouble and other related illness was the highest in the medium sized firms employing 250-499 workers, followed by the small sized firms.

From the review of related past studies it has been observed that, to the best of researcher's knowledge there is no comprehensive study to compare the present condition of the employee's health and safety environment of the present organization with the existing relevant laws. So there is a need to conduct the research to bridge the gap.

Chapter Three

Materials and methods

The methodology is an important part to conduct a research study thoroughly and duly. It helps to collect and valuable information and also to arrive at a meaningful conclusion. From this point of view, a great care was taken to collect data by using an appropriate method. The study was carried out through experimental for four months (June, 2018 to September, 2018) and the data are collected from an embroidery and printing factory in Ashulia, Bangladesh.

3.1 Study Area

Ashulia is a town and a small community in Bangladesh, located in the neighborhood of Dhaka. It is nested on the left bank of the Turag River, right opposite of Tongi. Vast paddy fields surrounding the village make it a kind of tourist attraction. The latitude of Ashulia is 23.899776, and the longitude is 90.323082. Ashulia. The GPS coordinates of it is 23° 53' 59.1936" N and 90° 19' 23.0952" E. The elevation of Ashulia is 16 meters height that is equal to 52 feet (Latlong.net, 2018). Ashulia's climate is classified as tropical. When compared with winter, the summers have much more rainfall. According to Köppen and Geiger, this climate is classified as Aw. The average temperature in Ashulia is 25.8 °C. The rainfall here averages 2008 mm. Precipitation is the lowest in December, with an average of 6 mm. In July, the precipitation reaches its peak, with an average of 377 mm. At an average temperature of 28.9 °C, May is the hottest month of the year. At 18.8 °C on average, January is the coldest month of the year. Between the driest and wettest months, the difference in precipitation is 371 mm. The variation in annual temperature is around 10.1 °C (Division et al., 2018). Two major theme parks of Bangladesh namely Fantasy Kingdom and Nandan Park are also located at Ashulia. A thana (political subdivision) under Dhaka district has been established here in the recent years. Environmentalists and some non-governmental organizations in Bangladesh have expressed concern over rapid urbanization of Ashulia especially in the context of ongoing real estate development projects in the area. The most affected city around Dhaka is now Ashulia. Most of Ashulia is now owned by the garment factory or land developers. (En.wikipedia.org, 2018).

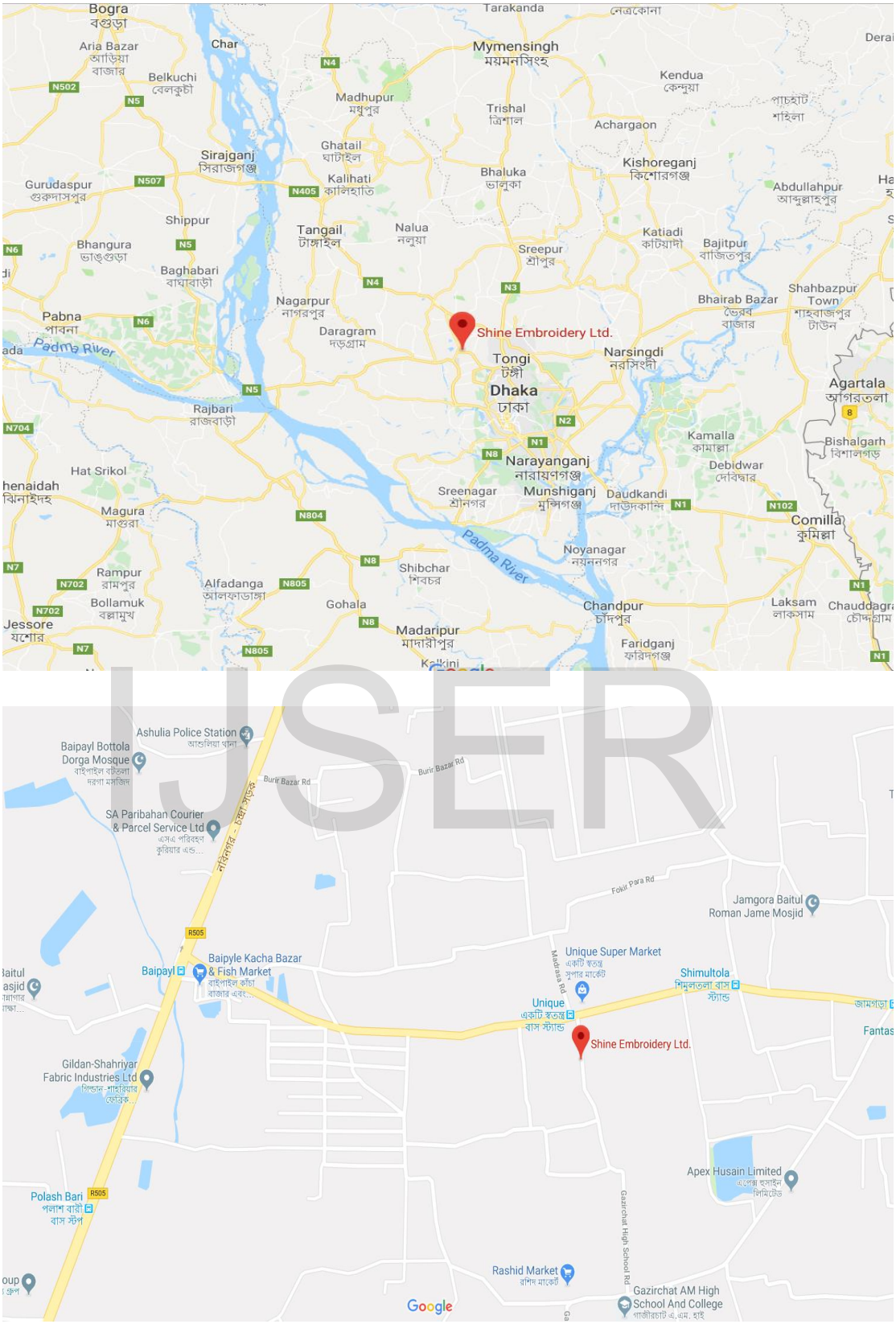


Fig. 3.1. Google map of the study area and the selected industry

3.2 Research Design

The nature of the present study is exclusively a case study which broadly falls under exploratory study. Basically only qualitative data were used in this study. Personal observation and interview schedule method were used to conduct the study.

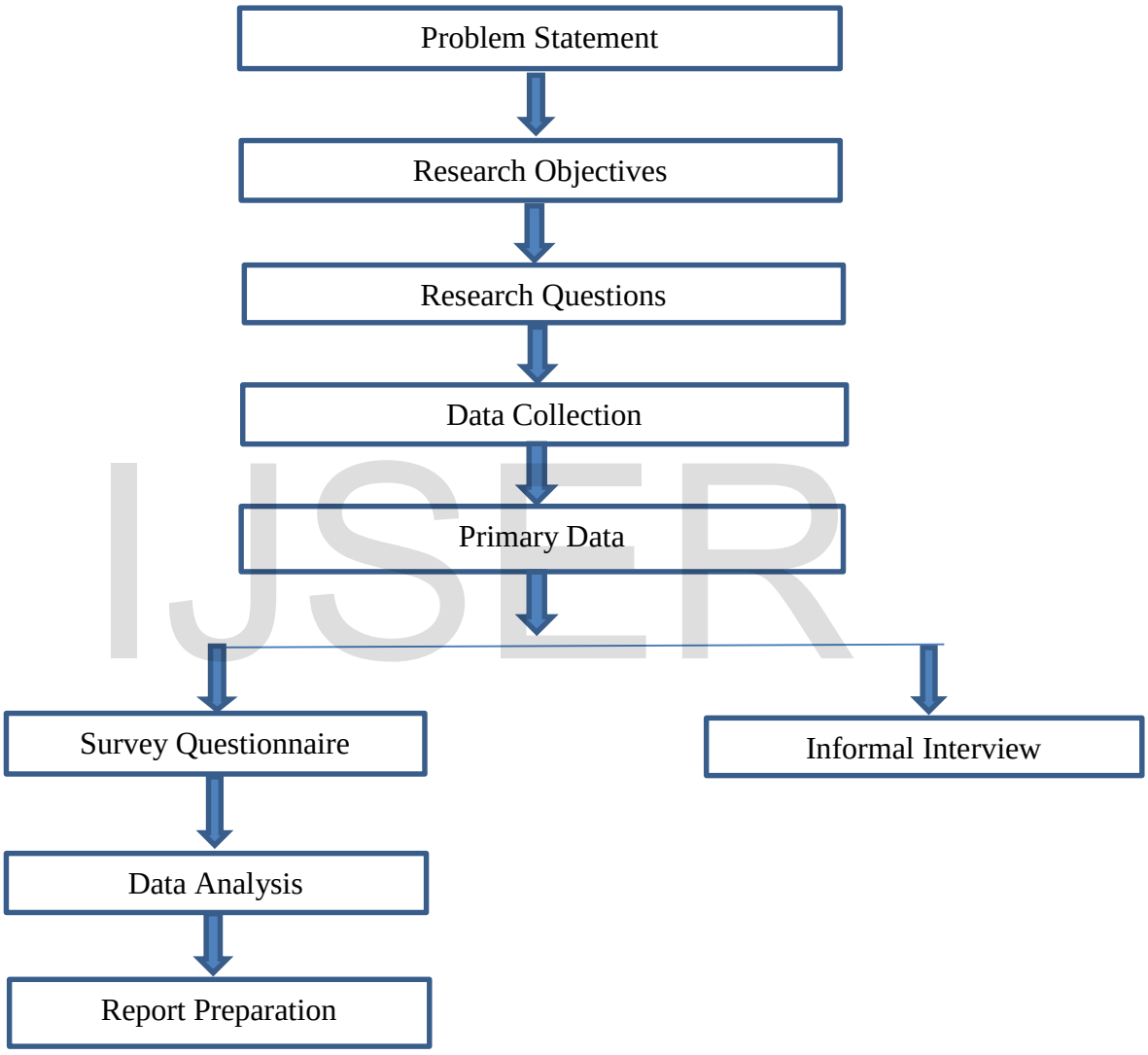


Fig. 3.2. An overview of the research design and its components

3.3 Sampling Technique

Among the 300 employees of the surveyed organization (Shine Embroidery Ltd.) 10% of the total surveyed population (i.e. 30) were selected randomly as the sample size, where 24 were workers of different floors and departments, 3 were concerned supervisors and another 3 Were departmental managers of the factory.

3.4 Sources of data

This study was basically based on the information collected from personal observation, informal conversation with workers, and face to face interview with the respective officers and staffs of the organization. Secondary data sources were also used in the present study to compare the observed situation with the necessary laws and rules. These sources are discussed below

3.4.1 Primary sources

As the study was about the health and safety issues of a specific factory in Bangladesh, personal observation, face to face interview with the respective officers, managers, workers of the organization were the main sources of primary data. Primary data were also collected through informal conversation with the workers and consultation with experts of the respective research fields.

3.4.2 Secondary sources

Sources of secondary data include:

- The Bangladesh Labor Act 2006
- The Bangladesh Labor Rules 2015
- Guidelines of BGMEA regarding health and safety of garment workers;
- Health and Safety policy of Shine Embroidery Ltd.
- Relevant journals, different newsletters
- Different relevant websites;

3.5 Processing and analyzing data

The collected data has been processed by using word processing software (MS Word). As the present study is a case study so it is basically qualitative research in nature. The collected qualitative data has been analyzed in descriptive form.

Chapter Four

Results and Discussion

4.1 Factory Background

Shine Embroidery Ltd. is located at 198, Gazirchat, Moddhopara, Baipal, Cantonment Board, DEPZ Ashulia Road, Unique Bus Stand, Savar, Dhaka, Bangladesh and started its production in 2000 at this existing location. The factory is mainly doing printing & embroidery. The factory located in a 3-storey building with a maximum Embroidery capacity of 102 million stitches/ month & Printing capacity of 250,000 pieces/month. Factory production area is about 28,198 square feet. A total of 300 employees are currently working in the factory which includes 238 production workers (134 male, 104 female) and 62 staff level employees. All the workers are local, and no migrant workers are employed. As per factory management, January to July are the peak production months of this factory. The management was experienced in social audits. As informed by the management, they faced at least 4 audits in the last year. As per the management, this year factory has devoted 20% of its capacity for Primark. The other existing main customers are H&M-40%, HBI-10%, DHB-10%, Bestseller-5%, K-Mart-10% & Others-5%.

The factory uses a clock punch time card & overtime register for recording the worker's in-out time. Factory runs in two shifts - from 8:00 am to 5:00 pm with one-hour lunch break from 1:00 pm to 2:00 pm (for Ramadan 1:00 pm to 1:30 pm), and from 8:00 pm to 5:00 am with one-hour night break from 1:00 am to 2:00 am. The weekly working days of the factory are Saturday to Thursday and Friday is observed as weekly off-day.

Wages are calculated on a monthly basis and paid by cash within 7 working days of the following month. Workers' salary is calculated on a monthly basis for 8 hours duty/day. Any work beyond 8 hours/day and work on weekly off-day work is considered as overtime.

Factory main entrance

Factory building

Printing section

Embroidery section

Rib Accessories section (aisles correctly marked)

Yarn store

Fig. 4.1 Factory main entrance and different sections of the factory

Accessories store Clock punch machine

Fig 4.2 Accessories store and clock punch machine

4.2 Factory walkthrough

During the plant visit, the facility was found to be spacious and well ventilated. Factory has sufficient number of first aid boxes for the current manpower. Emergency evacuation plans were posted in the production floors. Workers were found working in a safe and hygienic condition. Factory has provided sufficient number of male and female toilets for the workers. The factory has two exits for emergency evacuation of the workers. DB (distribution board) / SDB (Sub-distribution board) boards were found in a safe condition. Factory has provided hose pipe, and sufficient number of fire extinguishers and fire-fighting equipment. The factory had sufficient number of trained first aiders.

Evacuation plan Marked exit sign

Fig. 4.3 Emergency evacuation plan and clearly marked exit sign

4.3 Building Layout

The factory is located in a 3-storey building & 3 sheds. In the building, the ground floor has Embroidery, Yarn & Incoming goods store, Inspection room & ETP; 1st floor has Office, Accessories store, Doctor's room, Rib & accessories section & Childcare; and 2nd floor has Printing section, Printing chemical store & Laser room. Shed 1 has yarn store, shed 2 has security post, shed 3 has generator.

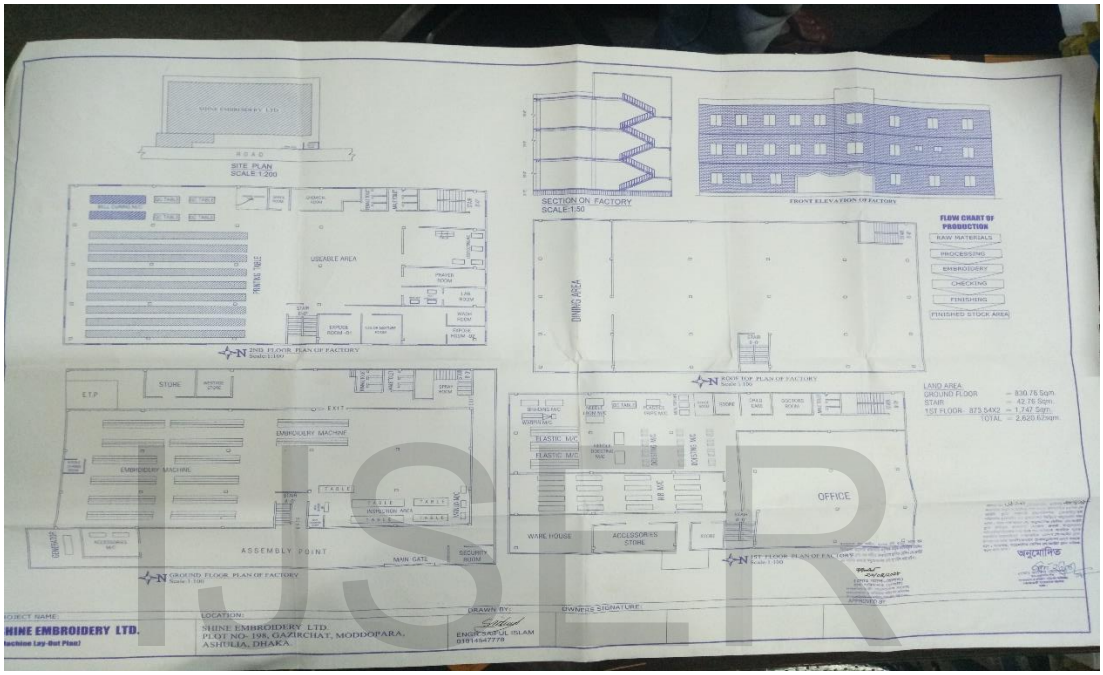


Fig 4.4 Building layout plan

4.4 Employees Interview

Thirty interviews (male 18 and female 12) were conducted in the empty space in the production floor and in medical room. The workers were found to be frank and at ease and shared all information. Interviewed workers informed that they were working without any pressure. Workers informed that the production pressure is the same round the year. There is a contract signed between the workers and the management and a copy is also provided to the workers. Workers confirmed that the management never forces them to work extra hours or practiced abusive language / harassment. Interviewed workers have informed that they work 8 hours/shift including 1-hour lunch break; beyond 8 hours' of work and weekly off-day work is considered as overtime. Workers shared that sometimes they need to work for 2 to 5 hours overtime on weekdays and on weekly off-days. Monthly wages and overtime wages are paid by

the 7th working day of the following month. Workers were found to be happy working in the factory as the working environment is friendly to them. They also confirmed that the fire drill was conducted at regular intervals. Internal training was provided related to fire safety, first aid, security, use of PPE, etc., at regular intervals. Most of the trained firefighters were aware regarding the firefighting procedure. Workers were aware of the PC members and their responsibility.

Fig 4.5 Employees interview

4.5 Job status

In practices, there is different kind of employees or workers are worked in the industries, some are permanent, some are apprentices, some are seasonal, semi-permanent etc. In this study industry, it is a good sign that all surveyed are holding

their permanent job status. Thus, indicates that this industry or factory is practiced permanent employment status.

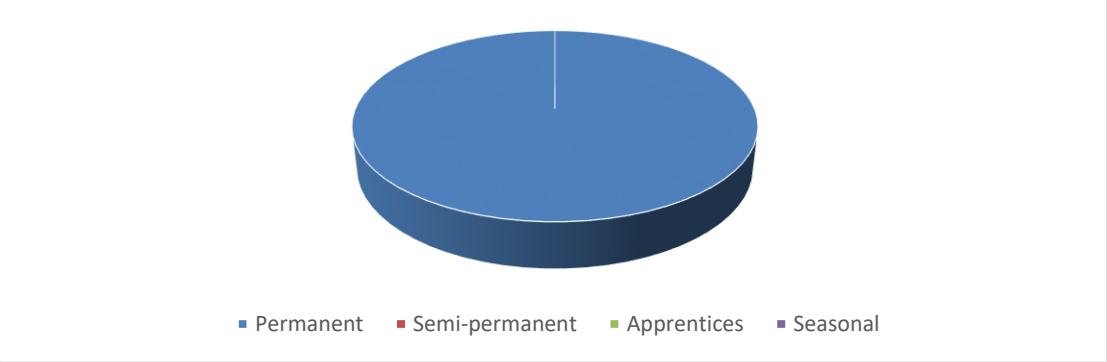


Fig 4.6 Job status of the respondent

4.6 Child Labor

Child labor was not found in the premises. The youngest worker's age was found to be 18 years. The factory also maintains age proof documents in the workers personnel files such as age verification certificate by a certified registered doctor, national ID card, birth certificate & school certificate.

4.7 Bonded Labor

Employees are free to leave the factory as and when they resign from service and receive all payments due. There was no restriction on worker's movement in the premises. There was no pressure from security guards to hold workers once they get authorized leave from the management. No evidence of punitive punishment was found inside the factory. During interviews, workers confirmed that all their dues are correctly paid, in case they want to leave the factory.

4.8 Forced Labor

During the floor visit it was noted that all workers are treated with respect and that the management has a precise policy on forced labor prohibition in the factory premises and no incident of shouting at workers or use of abusive language or physical abuse, the threat of physical abuse, sexual or other harassment or other forms of intimidation was noted. In addition to this, almost all workstations were found occupied by the workers in every department and during the interview it was noted that workers are satisfied with the existing management practice. Workers are allowed to go to the

toilet or canteen for refreshment without any hassle or taking permission from anyone.

4.9 Working Hours

12 months' time keeping records were asked from May'17 to April'18 and reviewed in detail for the months of April'18, January'18 & Aug'17. As per the provided records, factory has exceeded the legal weekly working hour limit of 60 hours, in accordance with Bangladesh Labor Act 2006, section-102. In the months of April'18, January'18 & Aug'17, the workers of all sections had worked an average of 70 hours/week to a maximum of 80 hours/week (including weekly off-day). Further, the maximum daily working hours was recorded as 13 hours. One day weekly off is not adhered to by the factory. In the months of April'18 & Jan'18, the workers of all sections had worked on a minimum of 1 to a maximum of 2 weekly off- days. This resulted in continuous work of 13 days (March 31, 2018 to April 12, 2018). In accordance with The Bangladesh Labor Law 2006, section-103, the factory shall provide one day off for six continuous days of work

4.10 Wage or salary payment status

12 months' time keeping records were asked from May'17 to April'18 and reviewed in detail for the months of April'18, January'18 and Aug'17. As per provided records, the factory pays the regular wages within 7 working days of the following month. Factory has ensured the country's current minimum wages of BDT 5300 per month is paid. The workers earned a monthly wage of BDT 5300 - BDT 18,000. The calculated hourly rate was between BDT 25.48 – BDT 86.54, with the average being BDT 33.65 (BDT 7000/ month). However, facility has ensured 5% annual increment to the entitled workers. Factory provides BDT 300 to all workers as monthly attendance bonus. In this study all the respondents opined that they are getting wage or salary on regular basis. This result revealed that the surveyed factory does regular practices of wage or salary payment.

4.11 Present conditions of employee's health and safety

The Bangladesh Labor Law 2006 provides some provisions regarding the health and safety of industrial workers in Bangladesh. From section 51-60, Health and Hygiene related provisions and from section 61-78 Safety of workers in any establishment are mentioned. Shine Embroidery Limited tries to follow the provisions of the act to ensure sound health and safety of its employees in the workplace.

Section 1: Management Related

Management Communication with workers

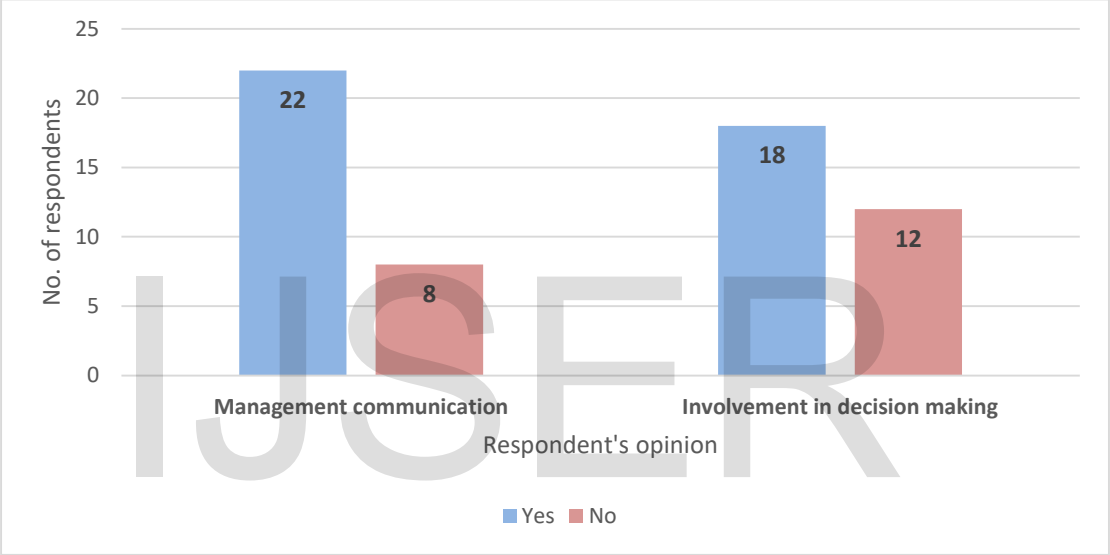


Fig. 4.7 Status of management communication with the workers

Among 30 employees 22 respondents said that management communicate with them and listen to them about health and safety issues and the rest 8 respondents said that management doesn't communicate and listen to them. 18 respondents were agreed that they are always made involved in decision making regarding safety matters and 12 respondents were disagreed

Management action regarding safety issue

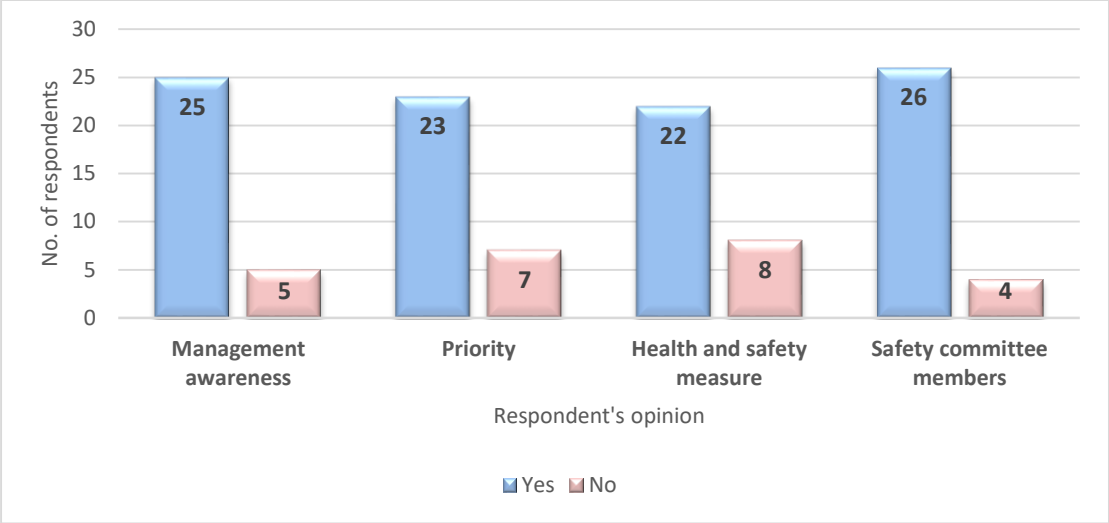


Fig. 4.8 Status of management action

25 respondents said that management is well aware of what they should do regarding safety and 5 person has given negative opinion.23 respondents said that safety is a high priority for your organization and 7 respondents were disagreed. Minimum number of respondents (22) were agreed regarding existence of health and safety measure whereas 8 respondents disagreed. 26, the maximum number of respondents said that they are aware of their safety committee members where 4 employees disagreed.

Training and supervision for OHS by management

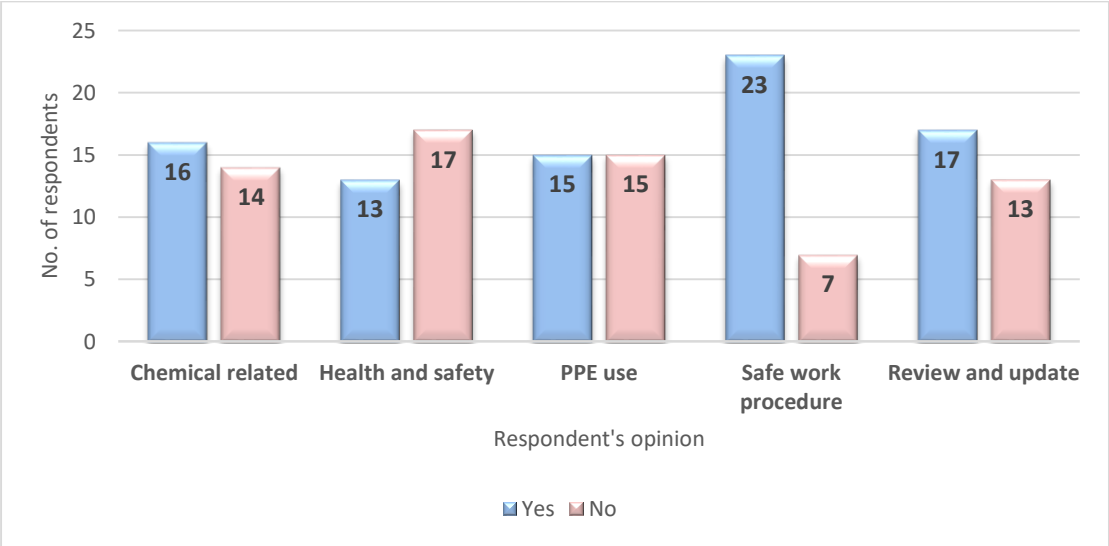


Fig. 4.9 Status of training and supervision for OHS by management

16, 13, and 15 respondents agreed regarding the training on the handling and use of chemicals, the health & safety issue, and use of PPE and rest 14, 17, 15 respondents denied respectively. 23 respondents said that they always follow safe work procedure whereas 7 respondents denied. 17 respondents agreed on reviewing and updating safe work procedure and other 13 respondents denied.

Section 2: Health and safety related

Job satisfaction

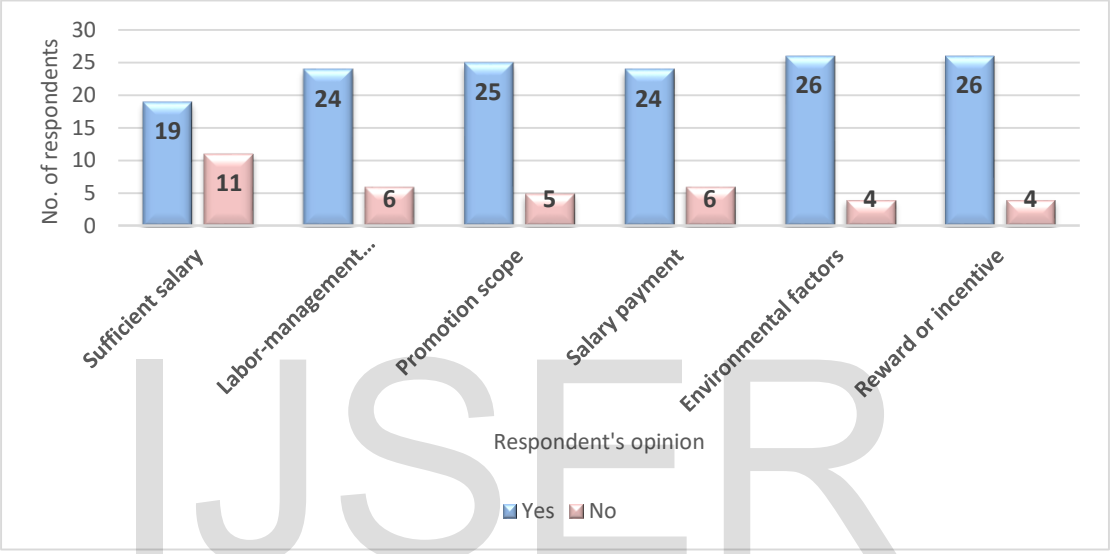


Fig. 4.10 Status of job satisfaction

The figure demonstrated the opinion regarding job satisfaction. This variable is measured with six items. It is found that the highest positive opinion (26) was for the friendly environmental factors at work place and the company provide reward or incentives for achieving target or personal performance. The lowest positive opinion was achieved for sufficient salary in relation to job.

Cleanliness in the overall factory

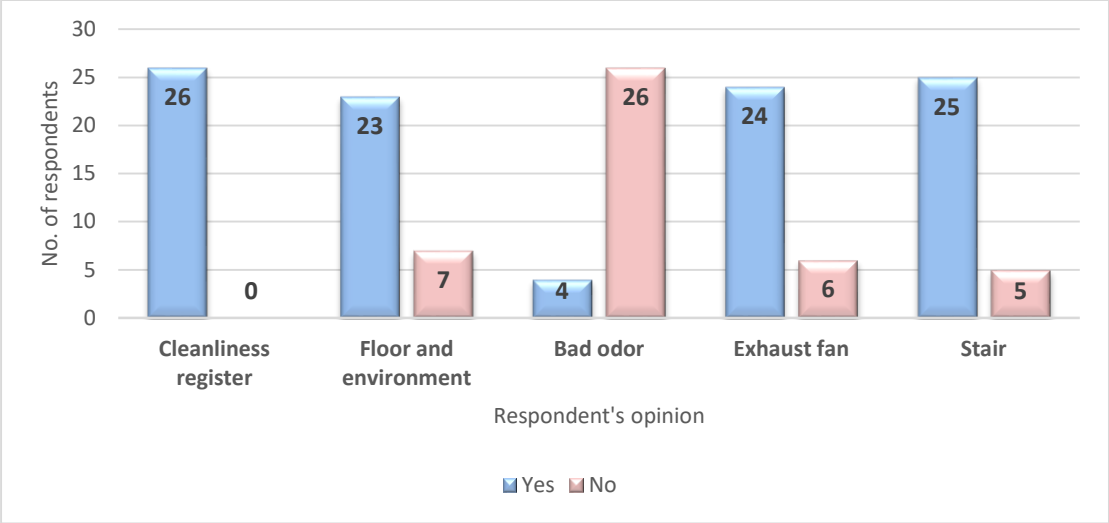


Fig. 4.11 Status of Cleanliness in the overall factory

The figure demonstrated the opinion regarding Cleanliness. This variable is measured with five items. It is found that the highest positive opinion (26) was for having daily cleanliness register and its maintenance. The lowest positive opinion (4) was achieved for bad odor in the working floor.

The Shine Embroidery Ltd., tries to follow in full the provisions of Section 51 of the Act. As per this section, every establishment shall be kept clean and free from effluvia arising from any drain, privy or other nuisance. The floors of every work-room shall be cleaned regularly, effective means of drainage shall be provided and maintained, the factory shall be re-painted or re varnished at least once in every three years and be cleaned at least once in every fourteenth months, finally the date on which the processes are carried out shall be entered in the prescribed register.

Drinking water supply

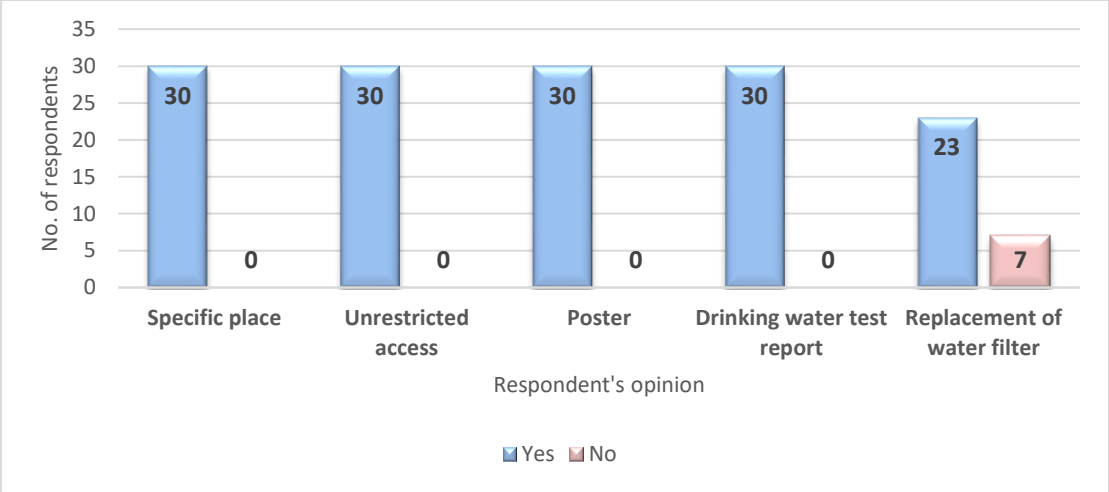
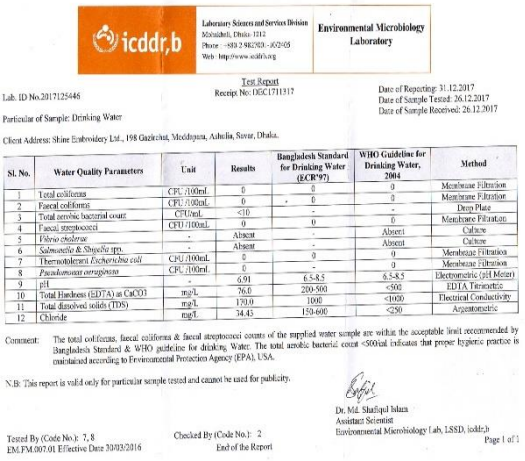


Fig. 4.12 Status of drinking water supply

The figure demonstrated the opinion regarding drinking water. This variable is measured with five items. It is found that the highest positive opinion (30) was for having specific place for drinking water, unrestricted access to pure drinking water, the sentence 'pure drinking water' written and posted in the source of drinking water, and the drinking water test report was posted in the defined place. The lowest positive opinion (23) was achieved for replacement of water filter. The factory follow the 58 of the Act Bangladesh Labor Law 2006 and the Bangladesh Labor Rules 2015, Rules-50 (1), Rules-50 (2), Rules-50 (4) and Rules-50 (5).

Drinking water



icddr,b

Laboratory Sciences and Services Division
Mohakhali, Dhaka-1212
Phone: +880-2-9827601-10, 9827035
Web: http://www.icddrb.org

Environmental Microbiology Laboratory

Test Report
Receipt No: OEC1711317

Lab. ID No.2017125446
Particular of Sample: Drinking Water
Client Address: Shine Embroidery Ltd., 198 Gazirchat, Meddapara, Ashulia, Savar, Dhaka.

Date of Reporting: 31.12.2017
Date of Sample Tested: 26.12.2017
Date of Sample Received: 26.12.2017

Sl. No.	Water Quality Parameters	Unit	Results	Bangladesh Standard for Drinking Water (ECR'97)	WHO Guideline for Drinking Water, 2004	Method
1	Total coliforms	CFU /100ml.	0	0	0	Membrane Filtration
2	Faecal coliforms	CFU /100mL	0	0	0	Membrane Filtration
3	Total aerobic bacterial count	CFU/mL	<10	-	-	Drop Plate
4	Faecal streptococci	CFU /100mL	0	0	0	Membrane Filtration
5	*Vibrio cholerae*	-	Absent	-	Absent	Culture
6	*Salmonella & Shigella* spp.	-	Absent	-	Absent	Culture
7	Thermotolerant *Escherichia coli*	CFU /100mL	0	0	0	Membrane Filtration
8	*Pseudomonas aeruginosa*	CFU /100ml.	0	-	0	Membrane Filtration
9	pH	-	6.91	6.5-8.5	6.5-8.5	Electrometric (pH Meter)
10	Total Hardness (EDTA) as CaCO3	mg/L	76.0	200-500	<500	EDTA Titrimetric
11	Total dissolved solids (TDS)	mg/L	170.0	1000	<1000	Electrical Conductivity
12	Chloride	mg/L	34.45	150-600	<250	Argentometric

Comment: The total coliforms, faecal coliforms & faecal streptococci counts of the supplied water sample are within the acceptable limit recommended by Bangladesh Standard & WHO guideline for drinking Water. The total aerobic bacterial count <500/ml indicates that proper hygienic practice is maintained according to Environmental Protection Agency (EPA), USA.

N.B: This report is valid only for particular sample tested and cannot be used for publicity.

Dr. Md. Shafiqul Islam
Assistant Scientist
Environmental Microbiology Lab, LSSD, icddr,b

Tested By (Code No.): 7, 8
EM.FM.007.01 Effective Date 30/03/2016

Checked By (Code No.): 2
End of the Report

Page 1 of 1

Drinking water test report

Fig 4.13 Potable drinking water and water test report

As per Section 58 of the Act, effective arrangement of sufficient supply of wholesome drinking water for all workers employed in every establishment shall be provided and maintained at a suitable point conveniently situated therein. The company ensures purified drinking water for workers and for regular use.

In accordance with the Bangladesh Labor Rules 2015, Rules-50 (1) as per the section 58 of the Bangladesh Labor Law 2006, there will be provision of pure drinking water in easily accessible and suitable place for all workers in each firm and the water should be stored in a hygienic way. Rules-50 (2) the place of storing the drinking water should be located at least 6 meter off from the wash room or toilet of the firm. Rules-50 (4) the place where the water is supplied for the workers should be kept neat and clean and the drain should be attached. Rules-50 (5) In case of the underground water or supplied in other way or tube well water, the owner should procure and preserve the certificate from public health engineering department of the government or any other organization approved by the government whether the water is free from arsenic and germs and drinkable or not at least once a year if directed by the inspector.

Sanitary condition in the whole factory

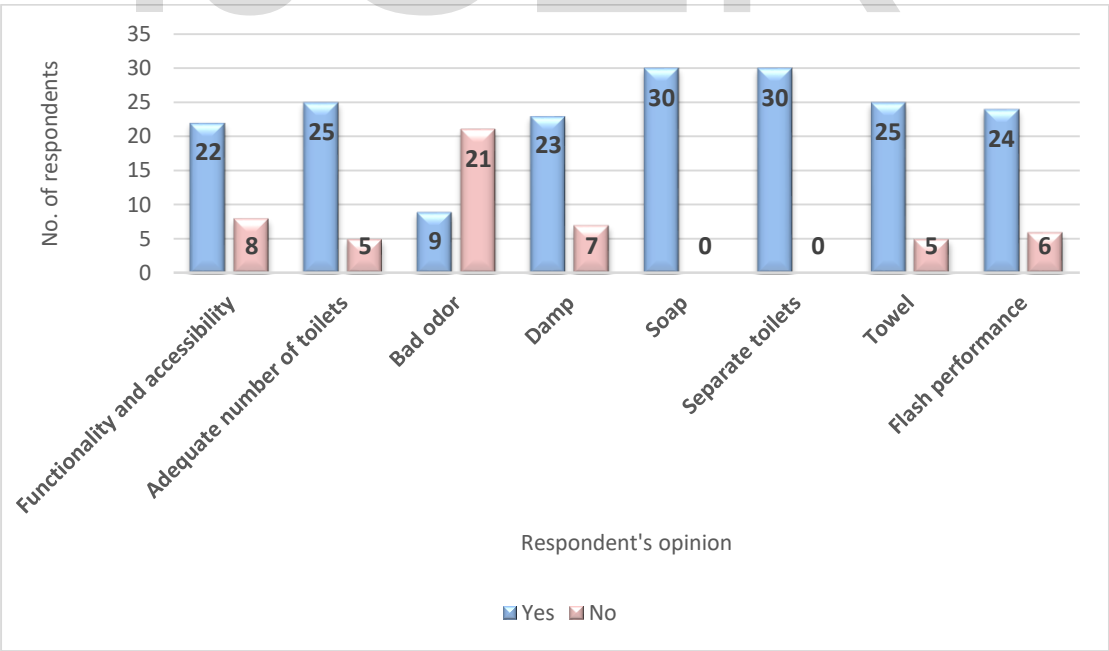


Fig. 4.14 Status of sanitary condition in the whole factory

The table demonstrated the opinion regarding washroom. This variable is measured with eight items. It is found that the highest positive opinion (30) was for having soap available in the toilets and basins, separate gents and ladies toilet available. The lowest positive opinion (9) was achieved for having any bad odor in the toilet.

As per Section 59 of the Act, in every establishment sufficient latrines and urinals, separately for male and female workers, adequately lighted, ventilated, conveniently situated and accessible to workers at all times while they are in the establishment shall be provided and maintained in a clean and sanitary condition at all times with suitable detergents and disinfectants. Although the organization provides three latrines and washrooms in every floor but these are not maintained in a clean and sanitary condition at all times.

Status of first aid and medical facilities

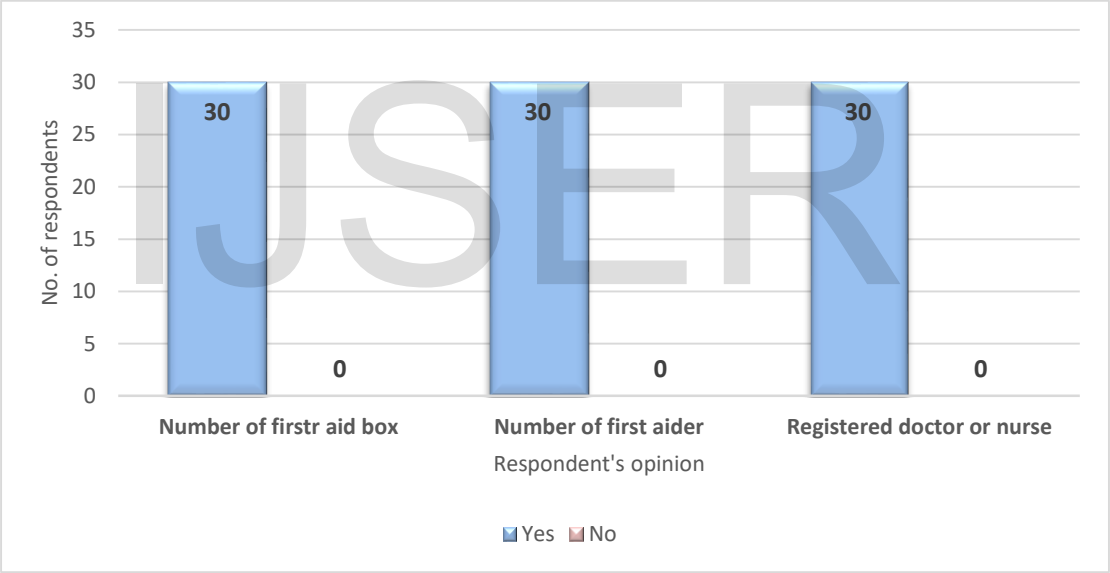


Fig. 4.15 Status of first aid and medical facilities

The table demonstrated the opinion regarding first aid and medical facilities. This variable is measured with three items. It is found that the same positive opinion (30) was for all the three items. The employees agreed that they have adequate number of first aid boxes available in the factory according to manpower, adequate number of first aider, and a registered doctor or nurse available to administer first aid. The factory tries to follow the section 89 (1) of Bangladesh Labor law 2006, Rules-76 (1), Rules-76 (5), and Rules-77 (1) of Bangladesh Labor Rules 2015.

Doctor's room

First aid box

Fig. 4.16 Doctor's room and first aid box

According to the Bangladesh Labor Rules 2015, Rules-76 (1) As per Section 89(1) of Bangladesh Labor law 2006, At least a Primary Aid Box or Cupboard/Almirah must be there in each department, section and floor. The box or cupboard must be marked with Red Crescent or Cross symbol. In addition, there shall be additional equipment as per the description of sub-section 2, 3 and 4. Rules-76 (5) the person employed for the supervision of the box or almirah and the relevant accessories and supplies must test the usefulness of the materials at least once in every 3 months' period. In addition, the relevant materials have to be replaced one month before the expiry of them. According to the Bangladesh Labor Rules 2015, Rules-77 (1) At least one registered Physician shall be in each Treatment Unit of the institute or factory with the facility of dispensary. Additionally, at least one trained compounder or medical assistant, nurse and subordinate employee shall be employed for helping him/her, provided that at least two registered Physicians shall be recruited in case of an institute where more than three thousand employees/workers work and necessary number of medical assistant and nurse shall be recruited for helping the Doctors.

Personal protective equipment

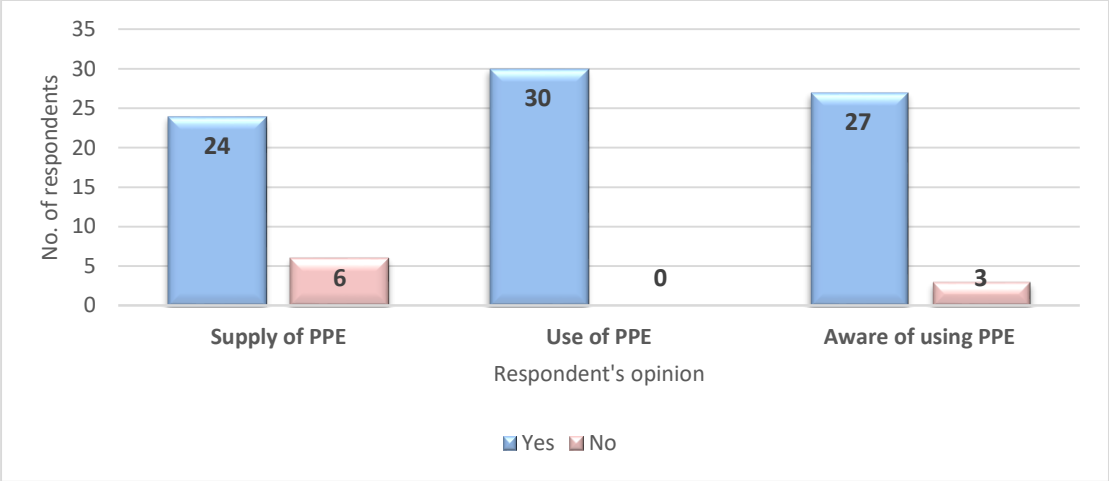


Fig. 4.17 Status of supply and use of personal protective equipment

The table demonstrated the opinion regarding personal Protective Equipment. This variable is measured with three items. It is found that the highest positive opinion (30) was for using PPE by the worker and the lowest positive opinion (24) was for the supply of enough and personal protective equipment by the factory management. The respected factory tries to follow the Bangladesh Labor Rules 2015, Rules- 67 (1), Rules-67 (2), and Rules- 67 (3).

Fig. 4.18 Workers were not using ear plug

According to the Bangladesh Labor Rules 2015, Rules- 67 (1) Safety measures and health safety must be arranged in accordance with the directions of this Rule or the regulations of the concerned govt. department for the workers who are employed in

the procedures of manufacturing processes that have high risks of physical injury or loss. Rules-67 (2) In addition to the arrangement of safety and health protection measures mentioned in Sub-section (1), the concerned manufacturing institute must provide necessary equipment, including safety shoes, helmets, goggles, masks, hand gloves, ear muffs, ear plugs, waist belts, aprons etc. and arrange training programs for the workers in using these materials and ensure their usage. Rules- 67 (3) No worker can be employed in the relevant works without ensuring safety and health protection measures and the training related therewith. In addition, personal safety equipment must be preserved in accordance with Information Form-23. Rules-68 (9) The data about the disbursement of personal safety equipment that are required for performing the activities mentioned in Section 79 (d) must be preserved as per Form-23.

Status of overall fire safety

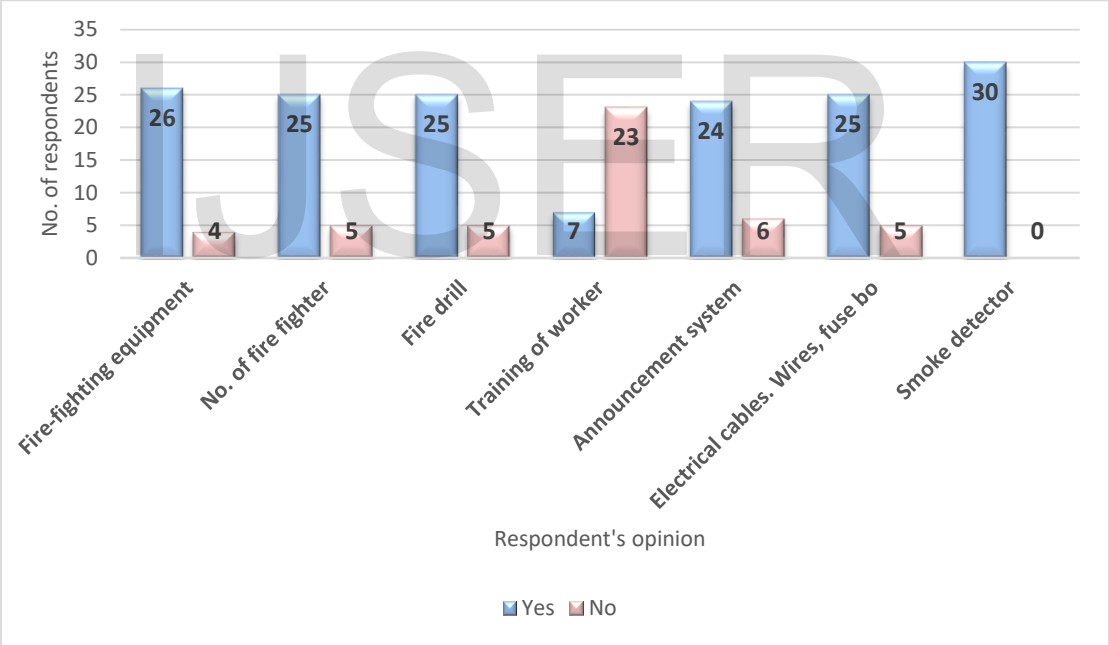


Fig. 4.19 Status of overall fire safety

The selected factory tries to follow all the provisions of Bangladesh Labor Rules 2015, Rules-55 (10), Rules-55 (14), and Rules-58 (1). From the employee interview the highest positive opinion was found for having smoke detector in the factory and the lowest opinion was found for despite fire drills, workers are not properly trained in fire extinguisher use of fire evacuation procedures. 26 employees agreed that the factory have adequate fire-fighting equipment & procedures in place, 25 employees

said that adequate number of fire fighter present in the factory. But during the assessment it was noted that the factory has arranged firefighting training from FSCD for 40 workers instead of 54.

Fire alarm switch

Fire alarm bell

PA system

Firefighting equipment

Fig. 4.20 Fire alarm switch, fire alarm bell, PA system, and firefighting equipment

According to the Bangladesh Labor Rules 2015, Rules- 55 (10) If possible, all workers or at least 18% of the workers employed in each department have to be trained on fire-fighting, emergency rescue operation, first aid and the usage of portable fire-repellant instruments. And the security has to be ensured by dividing the trained workers into fire-fighting team, rescue team and first aid team (6% members in each team) and the records related herewith have to be preserved in accordance

with Form- 22. Rules-55 (14) As per Section 62(8) of the Bangladesh Labor Law 2006, fire drills and emergency evacuation drills have to be arranged at least once in every six month period and the same has to be preserved in respective record books, in accordance with Form- 22. In addition, the concerned Inspector and nearby Fire Service Station have to be informed minimum 15 days before the drills are held.

In accordance with the Bangladesh labor Rules 2015, Rules 58 (1) The line of power supplying in every company and all electric appliances have to be in appropriate size and in sufficient strength and have to be made and kept and effective, so that it is not the cause of any physical risk of any person.

Fencing of Machinery

Section 63 of the Act states that, in every establishment all dangerous machinery must be securely fenced; e.g., every moving part of a prime mover, and every fly wheel connected to a prime mover, the head-race and tail-race of every water wheel and water turbine, every part of an electric generator, every part of transmission machinery and every dangerous part of any machinery. But during the assessment it was noted that one compressor was found open in the printing section. Factory shall separate the compressor from the production floor.

Fig 4.21 Compressor machine in production floor

Status of free movement within the factory

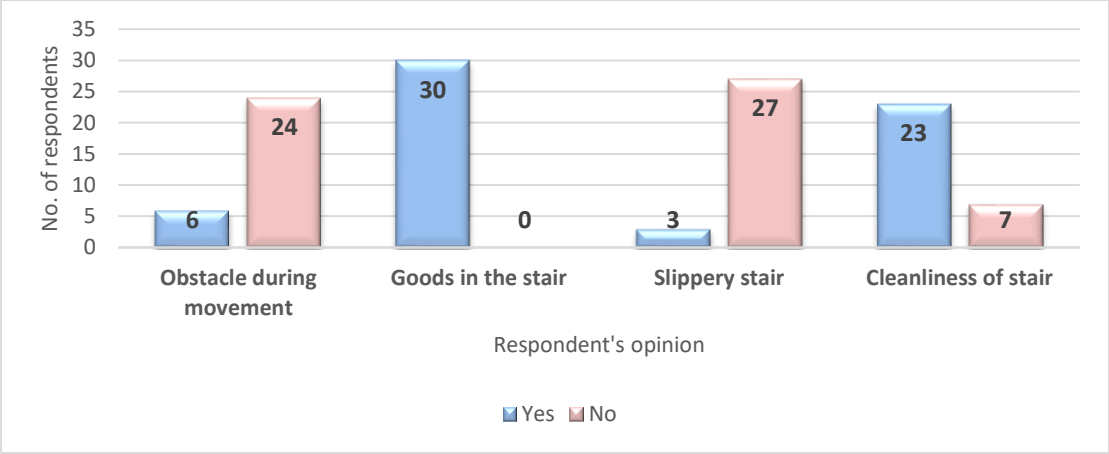


Fig. 4.22 Status of free movement within the factory

Maximum (30) employees said that there is no goods in the stair. They opined that the stair is not slippery (27), they didn't face any obstacle during movement (24) and overall the stair was clean (23). The factory have sufficient space for free movement and evacuation.

Emergency situation

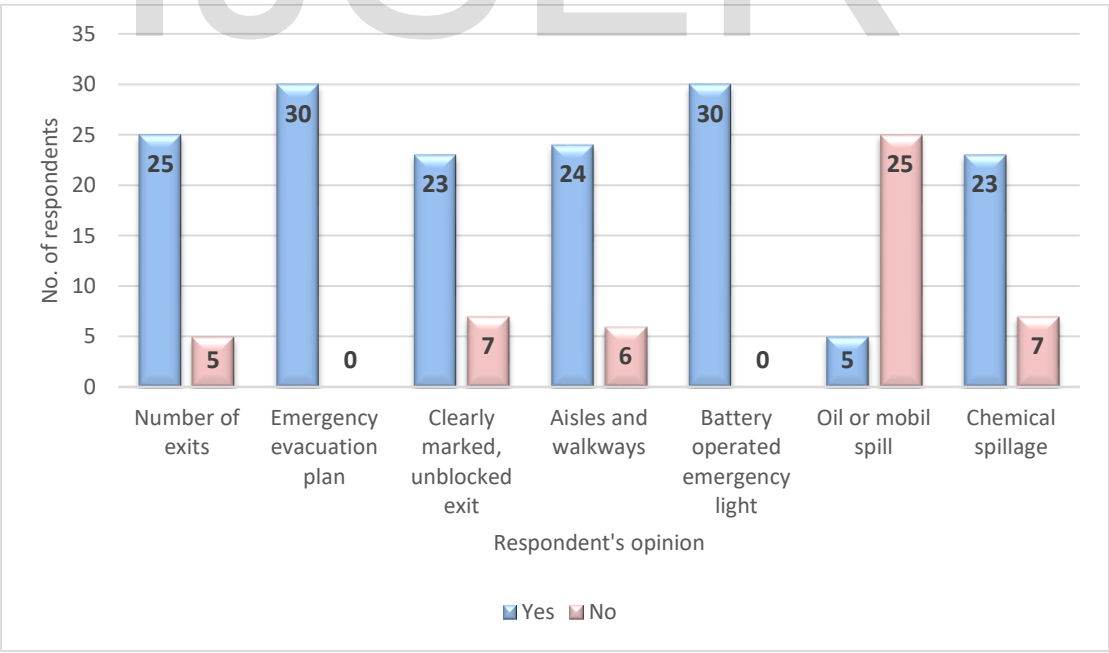


Fig. 4.23 Status of precautions and activities for emergency situation

The table demonstrated the opinion regarding personal Protective Equipment. This variable is measured with seven items. It is found that the highest positive opinion

(30) was found for having emergency evacuation plan and assembly point during emergency, second highest positive opinion (25) was found for adequate number of exits in the event of an emergency, the aisles & walkways clearly marked, free of obstructions and accessible (24), then it was found that the emergency exits clearly marked, unblocked & unobstructed (23) and for any occurrence of chemical spillage in the chemical store room or mixing area (23). This factory tries to follow the Rules-54 (1), Rules-54 (2) of Bangladesh Labor Rules 2015.

In accordance with the Bangladesh Labor Rules 2015, Rules- 54 (1) Each room of the factory building where more than 20 workers are engaged, there will be at least two exits in that case and these exits should be located in such way so that every person can reach with ease and without interruption from the workplace to the exit. Rules-54 (2) such exits won't be located more than fifty meters off from the workplace of the workers and these won't be less than 1.15 meters in width and 2.00 meters in height.

Chemical management

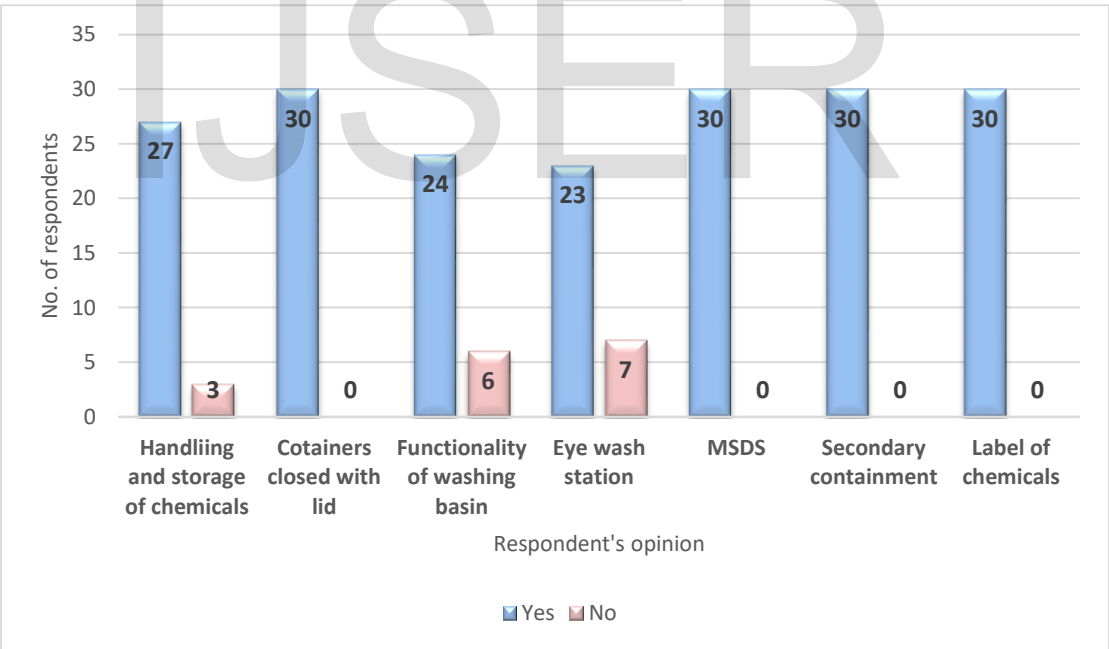


Fig. 4.24 Status of chemical management

In the assessment it was found that all the chemical containers closed with lid (30), MSDS of all the chemicals posed beside the chemical drum situated in appropriate place (30) according to the Bangladesh Labor Rules 2015, Rules-68 (10), the secondary containment of liquid chemicals alright (30), all the chemicals was labeled

(30). The employees said that all the chemicals/ hazardous materials properly handled & stored (27), the washing basin is operable (24). Many employees (23) agreed that that have eye wash station available in the chemical handling area. But there was no appropriate eye wash station according to the Bangladesh Labor Rules 2015, Rules-67(1). There was only a hand shower has been provided in the chemical handling area.

Chemical store

Improper eye wash station (Only a hand shower)

Fig. 4.25 Chemical store and improper eye wash station in the chemical handling area

In accordance with the Bangladesh Labor Rules 2015, Rules-67(1) Safety measures and health safety must be arranged in accordance with the directions of this Rule or the regulations of the concerned govt. department for the workers who are employed in the procedures of manufacturing processes that have high risks of physical injury or loss.

In accordance with the Bangladesh Labor Rules 2015, Rules-68 (10) The owner shall place Material Safety Data Sheet (MSDS) of dangerous materials in an easily noticeable place so that the employed worker can be well informed about the possible hazards.

Health issues of the worker

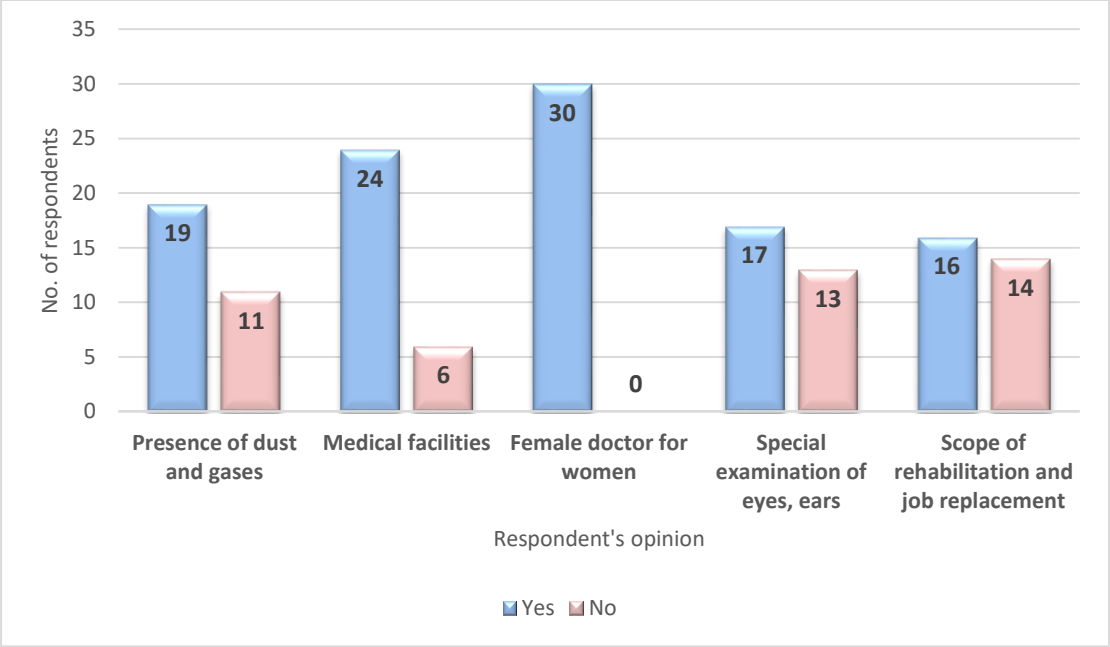


Fig. 4.26 Status of health issues of the worker

During the assessment it was found that maximum employees (30) said that female doctor is available for women workers, remarkable number of employees (24) said that medical facilities for workers (including first aid) prevails in this organization all time. Workers (19) said that there is the presence of dust, which are injurious to health, in your work environment, special examination of eyes and ears held when needed (17). Many workers (16) were frustrated about the scope of rehabilitation and job replacement of seriously injured who have been cured but suffer from some disability. The factory tries to follow the section 53 (1) of the Bangladesh Labor Law 2006, rules 46 (2) of Bangladesh labor Rules 2015.

According to section 53 (1) of the Bangladesh Labor Law 2006, if in any establishment, by reason of any manufacturing process carried on, there is given off any dust or fume or other impurity of such a nature and to such an extent as is likely to be injurious to the health of, or offensive to, the workers employed therein, the effective measures shall be taken to prevent its accumulation in any work-room and its inhalation by workers, and if any exhaust appliance is necessary for this purpose, it shall be applied as near as possible to the point of origin of the dust, fume or other impurity, and such point shall be enclosed as far as possible.

In accordance with Bangladesh labor Rules 2015, Rules-46 (1) For implementing the section 53(1), suitable exhaust equipment including 'dust sucker' should be installed in each firm or working room with a view to effectively exhausting the dust and fume and it should be installed in such a way so that dust or fume can be spread in the working room. Rules (2) the workers engaged in such places with dust and fume should wear mask, and Rules (3) the inspector general can fix the highest emission of the dust and smoke.

In accordance with Bangladesh labor Rules 2015, Rules-68 (4) The owner of the institute shall conduct the physical fitness test of the workers on his/her own cost, by a registered Physician, for the activities that are described in Sub-section (1) and (2) and he/she would receive a Medical Certificate of each worker as per Form-26, certifying his fitness for performing the activities. Rules-68 (5) The owner must receive the physical fitness certificate of each worker mentioned in Sub-section (4), which has to be certified by a registered Physician, at least once a year. Rules-68 (6) The concerned Physician and the owner must preserve the copies of physical fitness certificate in separate registers as per the description of Form-26 (a) and the certificate should follow the description mentioned in Sub-section (4) and (5).

Safety situation

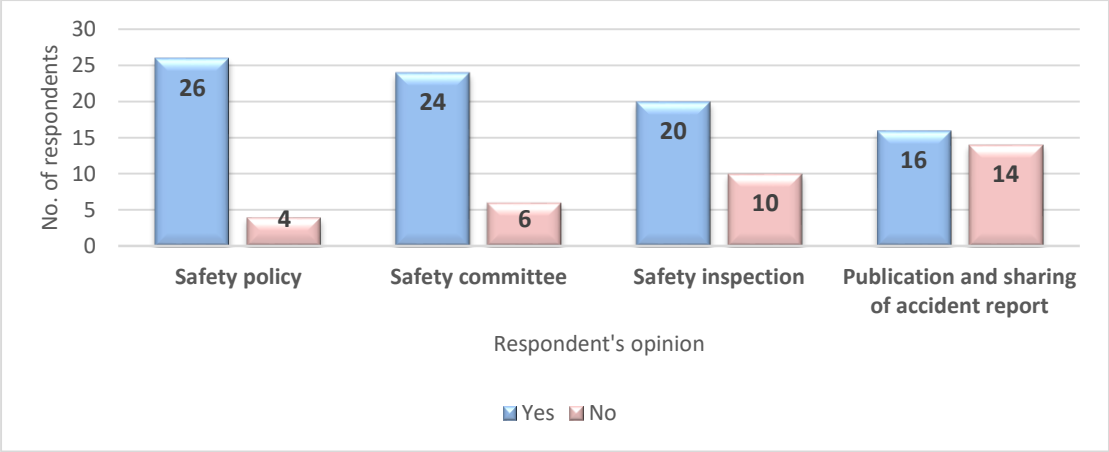


Fig. 4.27 Status of safety situation

The table demonstrated the opinion regarding safety situation. This variable is measured with four items. The highest positive opinion (26) was found for having safety policy. They workers opined that they have safety committee (24), safety inspection were done regularly (20), and the accident report is published and shared

among the employees and notice board (16). The factory follow the Rules-80 (1), Rules-81 (1), and Rules-81 (2) of the Bangladesh labor Rules 2015, Section 90 of Bangladesh Labor Law 2006.

In accordance with the Bangladesh labor Rules 2015, Rules-80 (1) As per Section 90, following data and information must be preserved in the Safety Record Book of each factory or industry unit and the book has to be shown to the Inspector if the same is sought by him/her:

a) List of equipment and chemical products that might pose severe health hazard or risk;

b) Preventive measures taken against hazardous products, possible effects of them upon the health of the workers and the arrangement of primary aid;

c) Description of personal protection instruments preserved for workers and details about the instruments used by the workers;

d) Complete list of instruments;

e) The date on which fire drill was conducted and the number of participants in it;

f) Date of refilling the fire-extinguishing instruments and containers;

g) Information about the electrical wiring and the tests conducted about the usefulness of the instruments;

h) List of the members of safety committee and the date of arranging training related therewith and the number of trainees in it;

i) And other types of data related with safety that is taken by the Owner;

Rules-80 (2) Major data recorded in Safety Book must be shown in a Safety Data Board that is hung in an easily noticeable place of the institute.

According to the Bangladesh labor Rules 2015, Rules-81 (1) As per Section 90 (a), the Owners of the institute where 50 or more workers are employed or were employed in a certain period of time in the year shall form Safety Committee. Rules-81 (2)Total number of members in the Safety Committee shall not be less than 6 (six) or more

than 12 (twelve) and there shall be equal number of representatives in it from the Owner Party and the Worker Party.

Effluent Treatment Plant (ETP)

During the assessment it was found that all the chemicals used in ETP were placed properly, all the process of ETP were running properly, the sludge of ETP were stored properly with tag containing the amount, date, and the sludge register were maintained, the ETP lab were clean, well furnished with necessary instruments, and the inlet and outlet meter of ETP were running properly and the daily data were recorded in a register. The wastewater produced in the printing section were used after treatment using the ETP again in the printing section for washing purpose. Thus they tried to follow the zero discharge concept of wastewater. The factory follow the Bangladesh Labor Rules 2015, Rules-47 (1).

Fig 4.28 Effluent Treatment Plant (ETP)

According to Bangladesh Labor Rules 2015, Rules-47 (1) As per the section 54 of Bangladesh Labor Law 2006, the arrangements of removing the wastes and liquids should be in accordance with the existing law and direction of the country and the clearance issued by the environment and health authorities concerned on the measures taken should be submitted to the inspector, and Rules-47 (3) All drains carrying wastes and water should be constructed with impervious materials with strong and durable lids so that there will be regular water flow and those wastes should be removed after making free from pollution.

Dust bean and spittoons

As per Section 60 of the Act, in every establishment there shall be provided, at convenient places, sufficient number of dust beans and spittoons which shall be maintained in a clean and hygienic condition. No person shall throw any dirt or spit within the premises of an establishment except in the dust beans and spittoons provided for the purpose. Although the company provides sufficient number of dust beans and spittoons but it cannot maintain these in a clean and hygienic condition for all time.

Waste management

It was found that the discarded materials were separated according to type of waste, no discarded materials were situated out of designated area, the bone meal or food waste were kept in the specific dustbin, a contract between the waste handler and the management was signed to take away the waste from the factory. The factory follow the Rules-40 (1) of the Bangladesh Labor Rules 2015

According to Bangladesh Labor Rules 2015, Rules-40 (1), wastes should be removed in the box with lid as the appropriate measure so that bad smell or germs can't be spread from these and Rules-40 (2) Metallic objects, wastes with terrible odor, chemical wastes and medical wastes should be removed in separate boxes every day.

Section 3: Organizational environment

Overall working environment

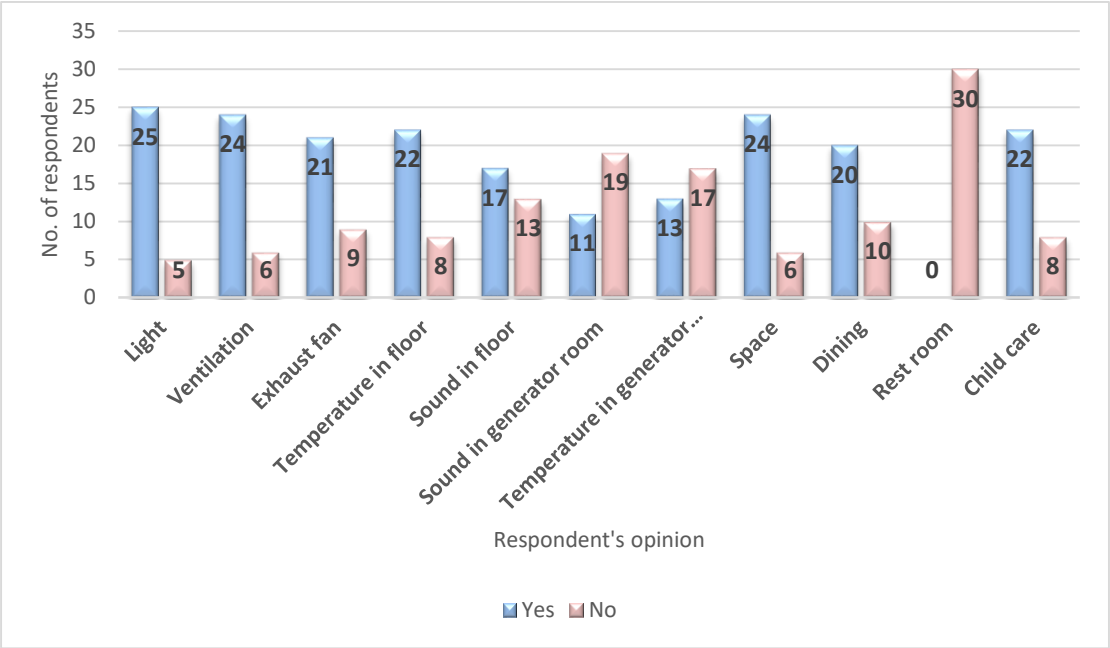


Fig. 4.29 Status of overall organizational working environment

During the current assessment it was found that there was adequate light in the workplace (25), all the exhaust fan were running (21), There was a system of adequate ventilation (24), the temperature was tolerable (22) in the floor although the office room is much comfortable than the working floor, The sound level was tolerable (17) in some section but in the embroidery section, rib section and in the generator room the sound level was high, more than ECR 1997 Standard (75 dB), the temperature level was high in the generator room, the working environment was found spacious (24), they had dinning (20) facilities but it is not so qualified. The workers didn't have any rest room facilities, there is a day care (22) but it is not well qualified. The factory tries to follow all the provision of section 52, section 93(1), and section 94(1) of Bangladesh Labor Law 2006, Rules-45 (2), Rules-49 (1), Rules- 87(1) and Rules- 92 of Bangladesh Labor Rules 2015.

According to the Bangladesh Labor Law 2006, Section 52, arrangements for adequate ventilation shall be made for securing and maintaining circulation of fresh air in every work-room of every establishment and suitable measures shall be taken to keep the

temperature in every such room in such a condition that may secure to workers therein reasonable conditions of comfort, and prevent injury to health of the workers.

In accordance with the Bangladesh Labor Rules 2015, Rules-45 (2) At least one thermometer should be kept operative in each working room as per the section 52(2) and this should be of good quality and it should be placed in a visible place of the wall of the working room.

In accordance with the Bangladesh Labor Rules 2015, Rules-49 (1) as per the Section 17 of Bangladesh labor Law 2006, the arrangements of lighting of the workplace of the workers should be at least 350 Lux at the height of 1.0 meter from the floor.

In accordance with the Bangladesh Labor Rules 2015, Rules- 87(1) The Owner of the institute where more than 100 (one hundred) workers are employed shall arrange a canteen for the workers, facilitating adequate space for minimum 10% of total number of workers. In accordance with the Bangladesh Labor Rules 2015, Rules- 92 As per Section 93, a) The Dining Room must accommodate at least 15% of total workers. In accordance with the Bangladesh Labor Law 2006, Section 93(1) in every establishment where more than 50 (fifty) workers are ordinarily employed, adequate and suitable number of rest rooms shall be provided and maintained for use of the workers, and a suitable lunch room with arrangement for drinking water, shall also be provided and maintained in that establishment so that the workers may eat their meals that they may have brought with them. According to Section-94 (1) of Bangladesh Labor law 2006, in every establishment, where 40 (forty) or more female workers are ordinarily employed, one or more suitable rooms shall be provided and maintained for the use of their children who are under the age of 6 (six) years.

4.12 Findings

After analyzing the health and safety matters of employees of the Shine Embroidery Ltd. the following findings have been revealed

- One compressor was found open in the printing section. Factory shall separate the compressor from the production floor in accordance with the Bangladesh Labor Law 2006, Section-63.
- It was noted that the factory has arranged firefighting training from FSCD for 40 workers instead of 54. In accordance with Bangladesh Labor Rules 2015, Rules 55(10) If possible, all workers or at least 18% of the workers employed in each department have to be trained on fire-fighting, emergency rescue operation, first aid and the usage of portable fire-repellant instruments.
- The factory has not provided eye wash station in the chemical handling area, only a hand shower has been provided. In accordance with Bangladesh Labor Rules 2015, Rule-67(1) Safety measures and health safety must be arranged in accordance with the directions of this Rule or the regulations of the concerned govt. department for the workers who are employed in the procedures of manufacturing processes that have high risks of physical injury or loss.
- Workers in the embroidery and rib accessories section were not using ear plug. In accordance with Bangladesh Labor Rules 2015, Rule-67(2) the concerned manufacturing institute must provide necessary equipment, including safety shoes, helmets, goggles, masks, hand gloves, ear muffs, ear plugs, waist belts, aprons etc. and arrange training programs for the workers in using these materials and ensure their usage.
- It was noted that the factory has exceeded the legal weekly working hour limit of 60 hours, according to Bangladesh Labor Act 2006, section-102. In the months of Aug'17, January'18 and April'18, 60% workers of all sections had worked an average of 70 hours/week to a maximum of 80 hours/week (including weekly off-day work). The maximum working hours in a day was found to be 13.
- It was found that one day weekly-off according to the Bangladesh Labor Law 2006, section-103 was not adhered to the worker by the factory. 60% workers of all sections had worked on a minimum 1 to 2 weekly off-days in the months

of January'18 and April'18. This has resulted in most continuous 13 days of work without a break (March 31 to April 12, 2018). Further, work on weekly-off days is considered as overtime instead of the workers being given a substitute holiday.

- The factory has effective arrangements for disposal of waste and effluents, but it has negative effect on environment.
- Although the work-room is kept clean regularly but both the surfaces of all glazed windows and skylights are not kept clean regularly.
- Although the organization provides sufficient latrines and washrooms in every floor, these were not maintained in a clean and sanitary condition all the time.
- The company provides sufficient number of dust beans and spittoons but cannot maintain these in a clean and hygienic condition all the time.

Chapter Five

Conclusion

5.1 Conclusion

Health and safety is the main responsibility of both government and company authority. A significant proportion of female worker are joined at RMG sector in Bangladesh. Large scale entry of women into the labor market has been one of the most striking features of recent industrialization in our country. Any kind of unwanted and unusual health hazards will make a disaster in country and on overall population. It can be said that no recommendation can be successful if all actors, that is, the government of Bangladesh, garments employers, NGO and above all the workers do not work together. The current phases engaged by government as well as BGMEA presented several in taking OHS procedures in RMG factories in Bangladesh. The government as well as of garments factories must be more worried about manufacturing safety connected rules as well as guidelines. The health and safety issues covered in the reports are almost identical. The company tries to follow the Bangladesh Labor Law 2006, Bangladesh Labor Rules 2015. But there are some lacking. Some issue that were found during the study are open compressor in the printing section, inadequate number of firefighter, improper eye wash station, non-use of PPE, excessive working hour, missing one day weekly-off, no rest room, unqualified childcare etc. In this study it is found that workers are not educated mostly under class eight especially in case of women workers. By profession they are mostly come from farmer family. It is remarkable that all the respondent of this study have their permanent job in Shine Embroidery Ltd. In this study the variables are related to ‘Management communication’, ‘Management action’, ‘Training and supervision’, ‘Job satisfaction’, ‘Safety issues’, ‘Health issues’, ‘Organizational environment’, ‘Working environment’. A strong health and safety program of any industrial establishment can assure safety and sound health of its employees. It can be concluded from the present study that the sample organization (Shine Embroidery Limited) does not follow all the provisions regarding health, hygiene and safety of workers as per the Bangladesh Labor Act 2006 and Bangladesh Labor Rules 2015. So the below recommendations should be followed by the sample organization. Not only the sample garment organization but also the concerned stake holders and regulatory

body (including Government of Bangladesh) should be sincere to improve the overall health and safety environment of the garment industry in Bangladesh. If it is possible to improve the health and safety environment of the garment organization, the overall productivity, performance of the workers as well as the organizations could be improved which will contribute in the economic development of Bangladesh.

5.2 Recommendation

After all the analysis and the findings about the health and safety of the employees of Shine Embroidery Limited, some important recommendations are given below that will hopefully make the company more effective and efficient in case of health and safety issues:

- Factory shall arrange for firefighting training for the required number of workers, in accordance with The Bangladesh labor Rules 2015, Rules- 55 (10).
- Factory shall ensure that all workers use ear plugs in the embroidery and rib accessories section.
- Factory shall provide a proper eye wash station in the chemical handling area.
- Factory shall separate the compressor from the production floor, in accordance with the Bangladesh Labor Law 2006, Section-63.
- Factory shall keep the working hours to fall within the legal limits.
- Factory shall provide one day off for six continuous days of work in accordance with The Bangladesh Labor Law 2006, section-103.
- Dangerous machinery should be well fenced to avoid unexpected accident. If the machinery remains fenced, workers will be able to do their job fairly.

5.3 Limitation of the study

Although the employees were very much polite and quite friendly and cooperative enough. But there were some limitations while doing the study. These include

a) Time constraints;
b) In Shine Embroidery Ltd. secrecy posed a major problem since disclosure of information was restricted as per policy of the company.
c) The related information were large enough as well as unstructured and it was a difficult task to compile them.

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Appendix

Survey questionnaire

Management communication			
SI No.	**Questions**	**Respondent's Opinion**	
		Yes	No
1	Is organization's management communicate with you and listen to you about health and safety issues?		
2	Are you always made involved in decision making regarding safety matters?		

Management Action			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is management well aware of what they should do regarding safety?		
2	Is safety a high priority for your organization?		
3	To you, does health and safety measure exist here?		
4	Are you aware of your safety committee members?		

Training and supervision for OHS by management			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are the training regarding the handling and use of chemicals occur in a regular basis?		
2	Is the training regarding the health & safety issue occur periodically?		
3	Is the training regarding use of PPE occur periodically?		
4	Are you always follow safe work procedure?		

5	Is your company reviews and updates your safe work procedures regularly?		

Job satisfaction			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is salary sufficient in relation to job?		
2	Is labor-management relation favorable?		
3	Are there any promotion prospect/scopes?		
4	Is salary paid in time?		
5	Are environmental factors at work place friendly?		
6	Is the company provide reward or incentives for achieving target or personal performance?		

Cleanliness			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there any daily cleanliness register & it maintaining regularly?		
2	Is the floor and environment neat and clean in the factory?		
3	Is there any bad odor in the working floor?		
4	Are all the exhaust fans neat and clean?		
5	Are the stairs neat and clean?		

Drinking water			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there specific place for drinking water?		
2	Do factory staff have unrestricted access to pure drinking water?		

3	Is the sentence 'pure drinking water' written and posted in the source of drinking water?		
4	Is the drinking water test report is posted in the defined place?		
5	Is the water filter replaced periodically?		

Toilets			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are toilets functional, clean & accessible at all times?		
2	Are Number of toilets for per workers enough according to gender?		
3	Is there any bad odor in the toilet?		
4	Are the toilets damp?		
5	Is the soap available in the toilets and basins?		
6	Is there separate gents and ladies toilet available?		
7	Is there towel available?		
8	Is the flash performing properly?		

First aid and medical facilities			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are adequate number of first aid boxes available in the factory according to manpower?		
2	Are there adequate number of first aider available in the factory?		
3	Is there a registered doctor or nurse available to administer first aid?		

Personal Protective Equipment			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Does the factory provide enough and personal protective equipment (PPE)?		
2	Are the personal protective equipment used by the worker?		
3	Are the worker aware of and inspired for using PPE properly?		

Fire safety			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are adequate fire-fighting equipment & procedures in place?		
2	Are there adequate number of fire fighter present in the factory?		
3	Is fire drill held regularly?		
4	Do you think despite fire drills, workers are not properly trained in fire extinguisher use of fire evacuation procedures?		
5	Is there system of making workers aware of ensuing danger by proper announcement through loud speaker?		
6	Are all electrical cables, wires & fuse boxes in good condition & clearly marked?		
7	Is there any smoke detector or heat detector or multi detector?		

Free movement			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there any worker facing obstacle during movement?		
2	Is there any goods in the stair?		
3	Is the stair slippery?		
4	Is the stair clean?		

Emergency situation			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are there adequate number of exits in the event of an emergency?		
2	Is there any emergency evacuation plan and assembly point during emergency?		
3	Are emergency exits clearly marked, unblocked & unobstructed?		
4	Are the aisles & walkways clearly marked, free of obstructions and accessible?		
5	Is battery operated emergency lighting installed & regularly maintained?		
6	Is there any oil or Mobil spill in the generator room?		
7	Is there any occurrence of chemical spillage in the chemical store room or mixing area?		

Chemical Management			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are all chemicals/ hazardous materials properly handled & stored?		
2	Are all the chemical containers closed with lid?		
3	Is the washing basin operable?		
4	Is eye wash station available in the chemical handling area?		
5	Are there MSDS of all the chemicals posed beside the chemical drum situated in appropriate place?		
6	Are the secondary containment of liquid chemicals alright?		
7	Are there label of all the chemicals?		

Health issues			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there any presence of dust and gases, which are injurious to health, in your work environment?		
2	Are medical facilities for workers (including first aid) prevails in this organization all time?		
3	Is female doctor for women workers available?		
4	Is Special examination of eyes and ears held when needed?		
5	Is there any scope of rehabilitation and job replacement of seriously injured who have been cured but suffer from some disability?		

Safety situation			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there any safety policy in this organization?		
2	Is there any safety committee?		
3	Is safety inspection done regularly?		
4	Is accident report is published and shared among the employees and notice board?		

Effluent Treatment Plant			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are the chemicals of ETP place in proper way?		
2	Are all the processes of ETP running properly?		
3	Is the sludge of ETP keep in the right way?		
4	Is the date is placed in the sludge bag of ETP?		
5	Is the ETP lab maintaining properly?		
6	Is the inlet and outlet meter of ETP is operable?		

Waste management			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Are the discarded materials separated properly?		
2	Is there any discarded materials situated out of designated area?		
3	Are the bone meal kept in the specific dustbin?		

Working environment			
SI No.	**Questions**	**Respondent's opinion**	
		Yes	No
1	Is there adequate light in the workplace?		
2	Is there adequate ventilation in the working area?		
3	Are all the exhaust fan running?		
4	Is the temperature tolerable in the floor?		
5	Is the sound level tolerable in the floor?		
6	Is the sound level tolerable in the generator room?		
7	Is the temperature tolerable in the generator room?		
8	Is the working environment spacious?		
9	Do you have qualified dining facilities?		
10	Do you have rest room?		
11	Is there any day care facilities for your child?		