ALLIANCE
FOR BANGLADESH WORKER SAFETY

BASELINE WORKER SURVEY REPORT

February 19, 2014

Foreword

This is a seminal report on workplace health and safety of Bangladesh's garment workers. The findings make a major contribution to our understanding on the knowledge, awareness, and experience of garment workers on the prevalent workplace hazards and existing workplace practices, policies and programs, and how these have impacts on their health and safety. It highlights the different safety barriers that Bangladeshi garment workers face in their workplaces. Addressing most of these barriers is very much within our reach.

Given the series of catastrophic incidents that have affected the garment industry over the last few years, the Alliance for Bangladesh Worker Safety- a network of 26 North American retailers- has conducted this large, comprehensive and national level study to assess the current needs, report on the existing health and safety situation, and create baseline relevant indicators for monitoring and evaluation purposes.

We know that so many lives could be saved and anguishes could be avoided if there was a greater emphasis on helping workers to work in a safer and healthier workplace that had the right equipment, programs and policies in place.

Improving the workers' safety by strengthening the factory level responses to prevailing hazards should be the immediate priority for all. We need a strong, confident and dynamic workforce in the garment sector for the economy of Bangladesh to thrive. If we are to see a real improvement related to garment workers' safety, we need to support our garment industry communities in their aspirations to let the workers live healthier and happier lives by taking more control over their working conditions.

This report spells out the biggest challenges the garment workers face and provides suggestions on how to tackle the key preventable safety hazards. There are many influences on worker safety. Broadly, these can be categorized as the three E's: engineering, education and enforcement.

We have a moral duty to remove the barriers to workplace safety and to invest sufficient funding and expertise to ensure worker safety. Governments, retailers, buyers, factory owners, NGOS, civil society, worker groups, and development partners can no longer overlook the millions of factory workers who are deprived of access to a safer and healthier workplace, rehabilitation, support, education and empowerment, and cannot realize their full working potential.

This report makes recommendations for actions at the local, national and international levels. It will thus be an invaluable tool for policy-makers, researchers, practitioners, advocates and volunteers involved in worker safety in developing countries. It is my hope that with the publication of this report, we all will become more attentive on helping garment workers to improve their health and safety.

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Table of Contents

Executive Summary

In November and December 2013, the Alliance for Bangladesh Worker Safety (the 'Alliance') conducted a study to assess workers' perspective of and experience with Health and Safety (H&S) risks in Ready Made Garment (RMG) factories. An important goal of the study is to ensure that workers are at the center of the Alliance initiative by gaining a better understanding of their needs. The assessment measures workers' knowledge and awareness of health and safety issues, their experience with accidents and fires, and their involvement in training and worker committee activities. The results provide a baseline from which to measure the effectiveness of Alliance training and assessment activities in improving worker safety.

The study captures quantitative and qualitative data through a 50 question multiple-choice survey and off-site Focus Group Discussions (FGDs). A majority of the survey questions focus on fire safety, but also cover building safety and other H&S concerns. The survey team designed the questionnaire to accommodate time limitations and a low level of literacy among the worker population.

The survey was conducted using a stratified random sample of 28 factories from an overall list of 625. A total of 3207 workers participated, including representative samples from each factory. An additional 101 workers participated in the FGDs.

An in-depth analysis of the results reveals a large percentage of surveyed workers who lack basic knowledge on fire and building safety. In addition, the study finds that workers feel a limited sense of responsibility and empowerment to prevent fires. Results also show that existing training activities have had limited impact. Training content is not adapted to account for workers' low literacy levels, particularly among female workers.

The study results also expose the absence of functioning worker participation structures and find that H&S committees are insufficiently driving worker participation. Supervisors are the number one channel for worker complaints but show a low sense of responsibility for and awareness of risk prevention. This finding points to a considerable risk that workers who report fire safety concerns will not get adequate responses or follow-up.

The report concludes with suggestions on how the findings can guide the future training and assessment activities. Alliance members will carefully analyze the report's findings and recommendations and are planning a range of activities, such as stakeholder round tables, to make sure the results are integrated into decision-making processes.

The Alliance plans to repeat this survey in a regular interval of 6 to 12 months to track whether its training and assessment activities are achieving the desired benefits for workers.

1. Introduction

1.1 Survey Context

The Bangladesh Ready Made Garment (RMG) sector has grown from just 5O factories in 1980 to over 5600[1]. Today, Bangladesh is considered a key production country for international clothing and retail companies. The RMG sector is the most important domestic source of employment in Bangladesh, employing around 4 million.[2]

Recent years have marked several tragic factory disasters in the RMG sector, such as the Tazreen Fire and the Rana Plaza collapse, which together took the lives of more than 1,200 people. In light of these tragedies, leading North American apparel companies came together in 2013 to form the Alliance for Bangladesh Worker Safety (the 'Alliance'). The Alliance is a five year, legally binding, results-oriented initiative dedicated to dramatically improving health and safety conditions for workers in Bangladesh. Alliance member companies source from approximately 833 factories in Bangladesh that employ approximately 1.6 million workers. The Alliance's goal is to ensure that safe workplaces in Bangladesh become the rule - not the exception - for all women and men employed in the Bangladesh RMG industry.

1.2 Survey Objectives & Focus

As one of its first activities, the Alliance conducted a baseline study to measure workers' knowledge and awareness of H&S risks, their experience with accidents and fires, and their involvement in training and worker committee activities. The study was conducted using worker surveys and Focus Group Discussion (FGDs). The purpose of the study is to:

- Ensure that workers are at the center of the Alliance Initiative by gaining a better understanding of their perspectives and needs
- Identify workers' knowledge and awareness gaps in the areas of fire and building safety in order to design an effective training plan; and
- Establish a set of baseline health and safety indicators to measure impact of the Initiative's training and assessment activities over time

The results presented in this report will guide the Alliance in the design and implementation of its training and assessment efforts. They also serve as the baseline to which future survey results will be compared. The Alliance will repeat the survey after 6 and 12 months in order to assess whether its training and assessment activities create the desired impact.

The Alliance team shares this report with all stakeholders with the goal of increasing understanding on the situation and challenges in Bangladesh's RMG sector. The team hopes all stakeholders can benefit from the findings when defining and implementing their efforts to improve worker health and safety in Bangladesh.

[1] Bazlul Khondhker, Abdur Razzaque, and Nazneen Ahmed (PDF). Exports, Employment and Working Conditions: Emerging Issues in the Post – MFARMG Industry."

[2] http://www.bgmea.com.bd/chart/number_of_employment_in_garment#.Uvrn60KSwhc

1.3 Survey Design & Questionnaire

The worker[3] survey captures quantitative and qualitative data through a multiple-choice survey and off-site focus groups.

The survey includes 50 questions on fire safety, building safety and other H&S issues. Questions cover the following aspects:

- Knowledge: What do workers know (and not know) about fire and building safety and other H&S issues?
- Awareness: How do workers view the risk of fire and do they feel responsible for improving safety?
- Training: How well have workers been trained on Health and Safety, and fire safety in particular?
- Experience: What have workers experienced or witnessed regarding accidents or fire incidents?
- Integration: To what degree are workers integrated into H&S committees and activities in their factory?

The survey is designed to address time limitations and a low level of literacy among the worker population. The survey team piloted the design in three factories to test the questions and methodology and adjusted the wording of those questions that workers had difficulty understanding. In the majority of factories, participants used tablets to enter their responses. Paper questionnaires were used when sufficient tablets were not available. Both versions of the survey were written in the local language and included pictures to help participants understand questions and answers.

Facilitators[4] led groups of workers through the survey to help ensure that they understood the questions and answers. Workers, particularly illiterate workers, felt more comfortable using tablets and were able to use the survey application with ease.

Surveys were conducted during working hours and factories were advised to pay workers for their time. Factory management provided the facilities, which were typically training rooms, meeting rooms, or the eating area. The survey took approximately 40 minutes for each group of workers (led by a facilitator) to complete, and there were typically three to six groups of workers taking the survey at the same time. Workers were informed that participation was voluntary. Factory management was not present in the room.

Photo 1: Baseline Worker Survey on iPad

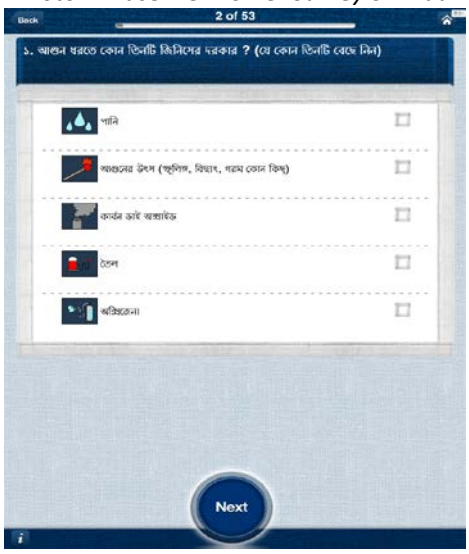
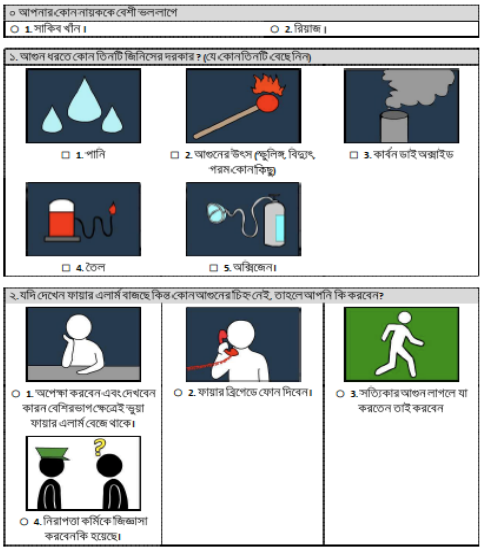


Photo 2: Baseline Worker Survey on Paper



[3] The term worker and surveyed worker are used interchangeably throughout this report. When the term 'worker(s)' is used, it only refers to those specific workers who participated in the survey and focus group discussions.

[4] Staff came from AFBWS, Elevate (AFBWS' managing company) and Phulki (Local Bangladeshi NGO). All facilitators had been previously trained on the survey and the survey procedure.

Off–Site Focus Group Discussions

In addition to the survey, the team conducted 10 off-site (away from factories) FGDs with the support of the local NGO, Phulki. Participants were recruited through Phulki's childcare center in worker communities in the near the factories. All participants were compensated for their time and joined the discussion voluntarily.

Facilitators held the focus groups in three different Phulki's Child Care Center Facilities. Each group had 10–12 participants, including both male and female RMG workers. Each FGD took approximately one hour. Through the use of discussions and games, facilitators asked workers to recount their experiences regarding fire incidences, fire safety training and to share their opinion on the importance of fire safety measures. The FGD discussions are important because they illustrate the stories behind the data and because they offered workers the possibility to freely express their thoughts and concerns outside of the factory environment.

1.1 Survey Sampling

The survey team conducted the survey using a stratified random sample of 28 factories from an overall list of 625 [5]. While the factories were randomly selected, the sample was stratified across factory size, product type and location. Based on the number of workers in each factory, the team selected a representative sample, ranging from 21 – 208 workers. The sample was calculated using a confidence level of 95%, and an error range between 5% and 8%. This methodology resulted in a total sample size of 3207 workers.

Photo 3&4: Workers Answering Surveys on Tablets

[5] Note: 625 factories were involved in the Alliance initiative at the time of the survey sampling. Between the launch of the survey and the finalization of this report, an additional 247 factories have joined, bringing the current total of active factories to 872.

Table 1: Factory Information					
Factory No.	No. of Workers	Survey Sample (No.)	EPZ	Region	Product Type
1	42	21	N	Chittagong	Washing
2	47	22	N	Chittagong	Washing
3	50	38	N	Dhaka	Printing
4	73	43	N	Dhaka	Woven
5	194	108	N	Chittagong	Woven
6	306	104	N	Dhaka	Woven
7	361	106	N	Chittagong	Knitting
8	366	112	N	Narayanganj	Woven
9	387	152	N	Dhaka	Woven
10	409	153	N	Chittagong	Woven
11	418	148	Y	Chittagong	Woven
12	494	76	N	Dhaka	Woven
13	508	124	N	Dhaka	Washing
14	589	191	N	Dhaka	Printing
15	690	148	N	Chittagong	Woven
16	720	130	N	Dhaka	Woven
17	750	160	N	Chittagong	Woven
18	780	151	Y	Chittagong	Woven
19	816	97	N	Dhaka	Knitting
20	865	80	Y	Dhaka	Printing
21	897	208	N	Chittagong	Knitting
22	1325	111	N	Dhaka	Woven
23	1940	141	N	Dhaka	Woven
24	2565	120	Y	Dhaka	Woven
25	2802	139	N	Dhaka	Knitting
26	4363	115	N	Dhaka	Woven
27	4500	113	N	Dhaka	Knitting
28	4870	96	N	Dhaka	Footwear
Total	32127	3207			

The survey team randomly selected the sample of participants from a list of all employees provided by each factory. They took into account specific workforce characteristics (e.g. the ratio of female workers to male workers, length of service, department and age) to ensure that selected samples reflect the different demographics of each factory. With one exception, all factories were producing for Alliance member companies at the time of the survey. Member companies also helped to ensure factory participation.

101 FGD participants were selected from three different worker communities through a “snowball system.” Parents whose children attended the child-care centers were invited to join. They in turn, invited their neighbors, who invited others. Participants did not have to meet any criteria, except be employed at the factory for at least one month.

2. Survey Respondents

The team surveyed over 3200 workers from 28 factories in the Dhaka and Chittagong regions.[6] Participating factories had been in business for an average of nearly 12 years. Around 62% of respondents work in factories in the Dhaka area. Factories vary in size, including small factories with less than 100 workers and large factories with more than 2000 employees.

Table 2 Factory Information by Location			
Region	# of Participating Factories	# of Participating Workers	% of Participating Workers
Dhaka	18	1982	61.8%
Chittagong	10	1225	38.2%
Total	28	3207	100%

Table 3 Factory Information by Size	
Size of workforce (# of workers)	% of Participating Factories
< 100	14%
≥ 100 < 300	4%
≥ 300 < 500	25%
≥ 500 < 1000	32%
≥ 1000 < 2000	7%
≥ 2000	18%
Average Years in Operation	11.6

	Table 4 Respondent Workers' characteristics				
		N	Average age	25.5	N
Male	42.2	1,345	Juvenile Workers (14-17 Years Old)	2%	61
Female	57.8	1,843			
Highest Education	%		Above 57 Years Old	0.2%	6
No schooling	9.2	292	Departments	%	N
Primary school	32.9	1,047	Sewing	51.5	1,639
Middle school	34.9	1,112	Finishing	15.7	499
High school	18.4	587	Cutting	9	287
Vocational School or above	4.6	149	Embroidery	7.7	246
Position	%		Quality Control	6.7	214
Workers	93.1	2,954	Washing	4.7	149
Supervisors	5.7	180	Storage	1.9	60
Technicians	1.3	41	Packaging	1.7	55
Average length of service	2.6 years		Ironing	1.1	35

[6] While 100% of participants filled out the survey, not all participants completed every question. As a result, N varies slightly as those questions with missing data are not included in data analysis.

Table 4 illustrates the characteristics of surveyed workers. The majority of respondents are female (58%), with middle school or lower education levels (77%). The ratio of female respondents to male respondents varies by type of production process. Male workers make up the vast majority of surveyed workers in washing departments/factories, whereas the ratio is more balanced in knitting departments/factories. The average age of respondents is 26 years. Only 2% are Juveniles (above the legal minimum age of 14 but below the age of 18)

Over half (52%) of surveyed workers are from sewing departments, followed by finishing (16%) and cutting (9%). At the time of the survey, respondents had worked at the factories for an average of 2.6 years, reflecting a relatively stable worker population.

The 101 participants in the 10 FGDs are all RMG factory workers, working either as helpers or operators. Their length of service in the factories varies from a few months to 12 years.

Table 5: FGD Information

Location	# of Participating Workers	Number of Different Factories Represented by Workers
Savar	20	6
Gazipur	40	20
Mirpur	41	22

3. Fire Safety

3.1 Fire Safety – Knowledge

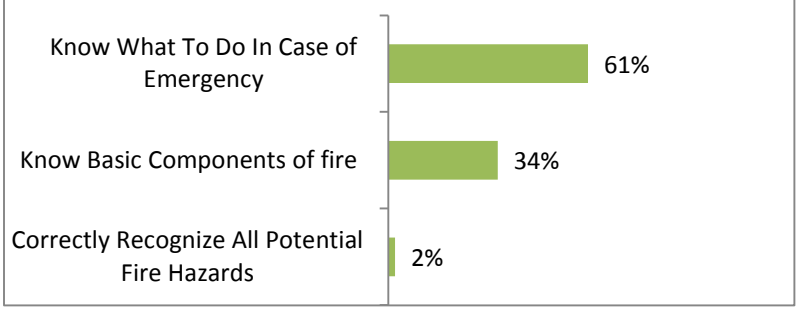
The first part of the survey measures workers' knowledge of fire safety. Questions focus on:

- Basic elements needed to start a fire
- Fire hazards
- Correct actions to take if the fire alarm sounds
- Correct actions to take in the event of an emergency (correct evacuation)

Results from the basic elements portion show that two-thirds (66%) of surveyed workers are unable to correctly name three elements that are needed to start a fire, 42% do not realize that oxygen is needed to start a fire, and over half (56%) incorrectly think carbon dioxide is an essential element needed to initiate a fire.

For the fire hazards portion, participants were given a set of six scenarios and asked to identify potential hazards. Responses reveal that only 68 of 3,207 workers (2%) can correctly identify all fire hazards. The majority of respondents do not consider an overfilled storage room (67%) or electrical wires under mats or carpets (52%) to be a fire hazard.

Chart 1: Answer Key Knowledge Questions Correctly (N=3,207)



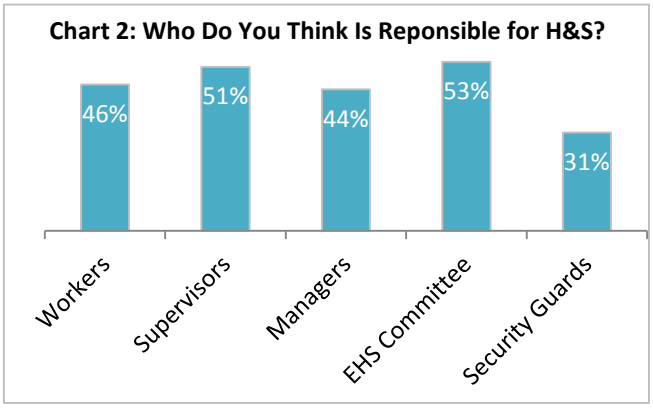
Regarding actions in response to a fire alarm: one-third (34%) of respondents say they would respond as if there was a real fire. The other third (32%) say they would wait and see, because they think most fire alarms are false alarms. The remainder thinks it is best to contact the security guards (21%) or the fire brigade (13%).

Lastly, in the event of an emergency, 61% surveyed know that all they need to do is to leave the area using designated escape routes. 24% incorrectly think they should find shelter in a safe place inside of the building and 17% think they should take the elevator to exit the building.

Overall, survey results indicate that there is a significant gap in workers' knowledge about fire safety. Two thirds of surveyed workers do not know the basic elements need to start a fire, only 2% are able to correctly identify common hazards, and nearly 40% do not know what to do in case of an emergency.

There is a significant gap in surveyed workers' knowledge on fire safety. Only 2% are able to correctly identify common hazards, and 39% do not know what to do in an emergency situation.

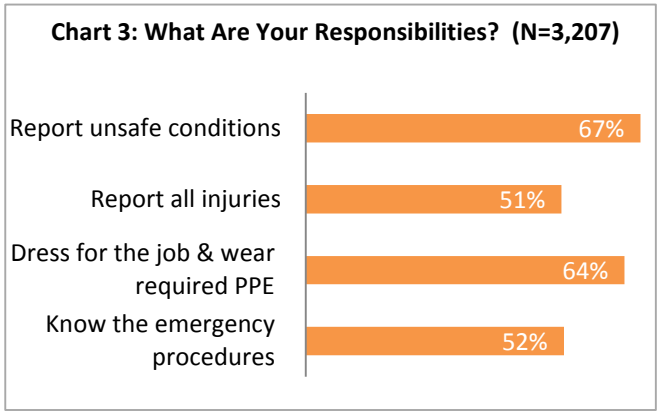
3.2 Fire Safety – Awareness



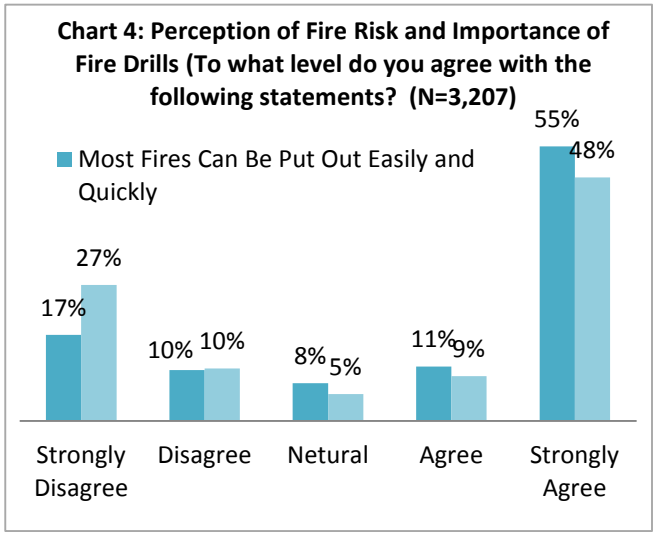
Over half (54%) of the surveyed workers do not feel responsible for health and safety at work, and nearly three-quarters (73%) think some fatal fire accidents cannot be prevented.

The next part of the survey measures fire safety awareness. The term 'awareness' refers to workers' perception of (1) their personal responsibility for improving fire safety in their factories and (2) the potential danger of a fire. A total of five questions covered the following topics:

- Responsibilities for improving H&S in factory
- Likelihood of a fire threat
- The importance of fire safety
- Possibility of preventing a fire



As shown in Chart 2, workers believe all factory staff has some level of responsibility for managing H&S issues.[7] The largest number of surveyed workers (53%) think the Environmental Health and Safety (EHS) Committee is responsible. A majority (51%) thinks supervisors are responsible, and slightly less than half (46%) also see themselves as responsible. The smallest percentage (31%) put responsibility onto security guards.[8]



When given a list of responsibilities, nearly half of the surveyed workers do not think it is their obligation to know the emergency procedure (48%) or report injuries (49%). Approximately one third do not believe they share responsibility for reporting unsafe conditions (33%), nor feel obligated to wear protective equipment or clothing to ensure their safety (36%).

Regarding the topic of perception, a majority of surveyed workers minimize the risk of fire and do not see the value of fire prevention measures. 66% think that most fires can be easily managed and do not constitute a threat; however, nearly three quarters (73%) think that some fatal fires are just not preventable. Respondents also put limited importance on fire prevention measures, with more than half (57%) agreeing that fire drills and safety training should not be

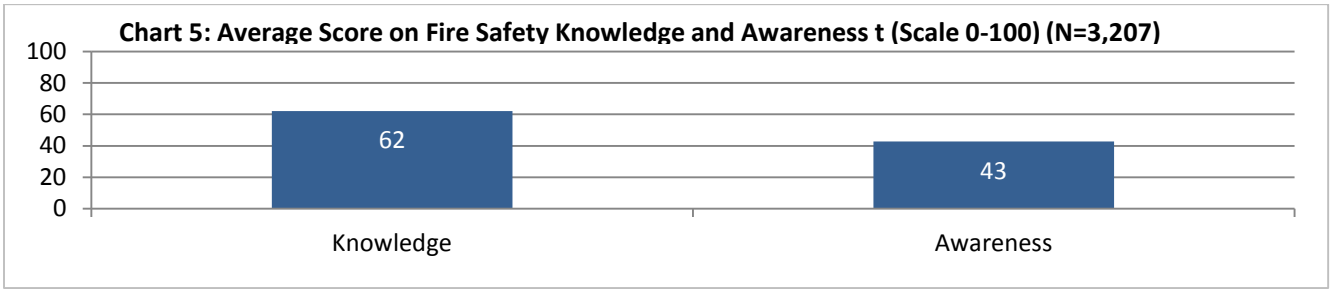
[7] Throughout the report, the reader will find questions, like this one, that allows respondents to select more than one answer. In these cases, the percentages do not add up to 100%.

organized during peak season (Chart 4). FGD comments support this finding, with workers voicing that these activities take too much time and increase pressure on them to reach production targets during peak season.

These results indicate that a majority of surveyed workers do not see the importance and effectiveness of fire safety measures and training. In addition, many perceive most fires to be low risk. This combination could potentially influence workers' participation in fire prevention activities and their response to fire emergencies.

3.3 Comparing Knowledge & Awareness

When the combined measures for knowledge and awareness are compared, the gap is bigger for awareness than for knowledge.



As shown in Chart 5, on a scale from 0 to 100 (100 indicates all participants received a perfect score), the average score for awareness is 43, while the average score for knowledge is 62. This comparison shows that while both areas need improvement, the level of awareness is lower. This result is not surprising given many training designs focus on knowledge over awareness, with little time dedicated to helping participants understand the underlying reasons behind key concepts and practices.

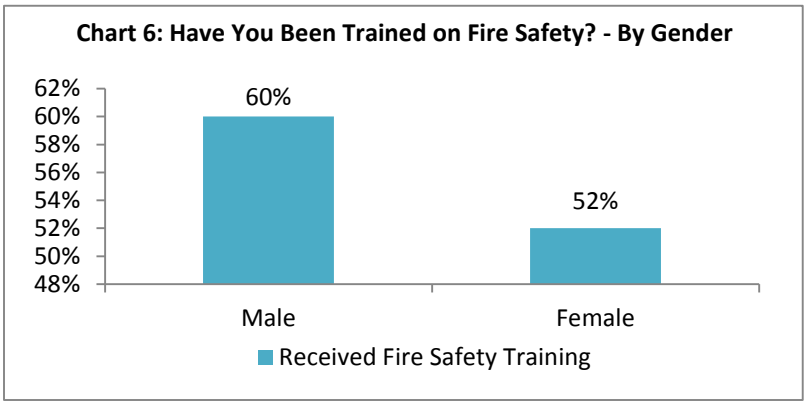
3.4 Fire Safety - Training

45% of surveyed workers are not trained on fire safety and focus group discussions reveal that males are often selected over females to participate in training. Most workers (87%) have participated in a recent fire drill, but drills are not always carried out correctly or offered to night shift workers.

To better understand the amount of fire safety training workers have received, the survey team assessed:

- Whether workers received H&S training when they joined the factory
- Whether any additional training on H&S is provided
- Whether workers were trained on fire safety
- Whether workers found the training content was easy to understand
- Whether workers participated in an evacuation drill in the past three months.

The data shows that nearly three quarters (73%) of surveyed workers received formal health and safety training when they joined the factory, another 15% reported being 'briefly informed' on H&S issues, and only 5% had not received any type of H&S training. Results suggest, however, that in many cases the H&S training did not include fire safety, as 45% of participants stated they had not been trained on fire safety.



During the FGDs, some participants noted that male workers were selected over female workers to participate in trainings. This was further supported by survey results, which showed that 60% of males and only 52% of females reported being trained.[9] The relationship between gender and health and safety training is discussed in more detail later in this report.

With regard to evacuation drills, 87% of respondents say they have taken part in a drill in the past three months. FGD results reveal, however, that there are still gaps in drill coverage. Participants pointed out that drills are conducted during daytime, which means that nightshift workers often do not get to practice.

In addition, some participants report that drills are not always conducted appropriately. For example, sometimes there is no "head -count" or workers are evacuated to lower levels of the building rather than outside. In other cases, workers think that the drills are not real and therefore do not participate.

> "Male Workers receive more training than female workers."
> "There are no evacuation drills in the evening for night shift workers."
> ---FGD participants

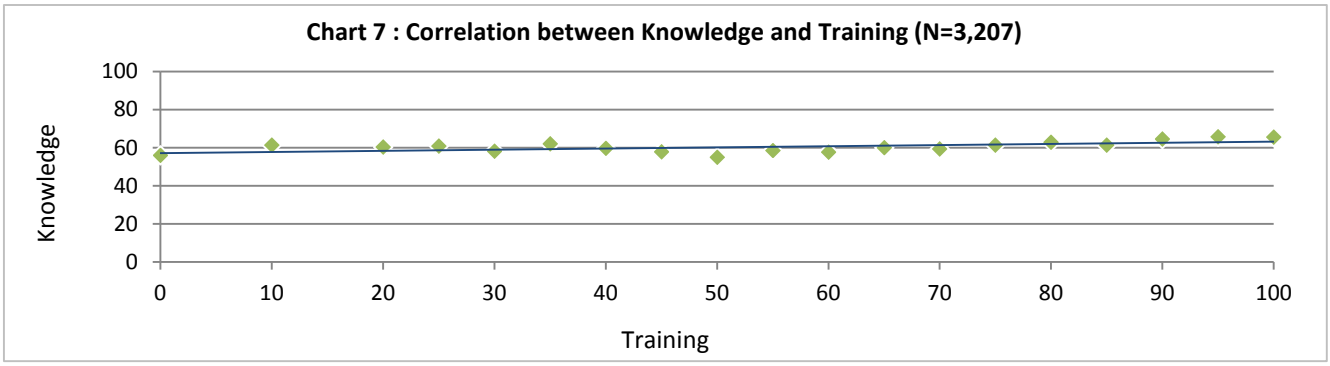
[9] One-way ANOVA results show that male and female workers differ significantly in terms of receiving fire safety training, it is highly significant at 0.000.

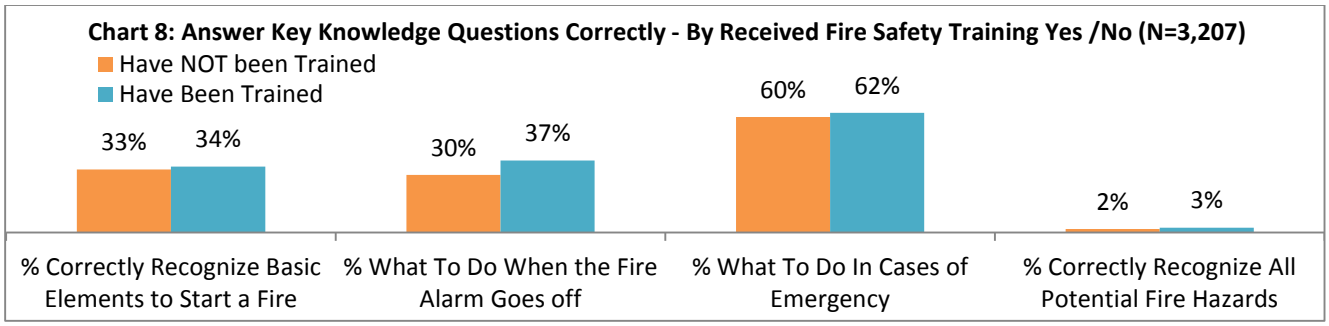
3.5 Impact of Training on Knowledge and Awareness

H&S training only slightly improves worker knowledge, if at all (Chart 7). The data reveals that those workers who received fire hazard and emergency response training know just slightly more than those who received no training at all.

To better understand the relationship between training, knowledge and awareness, the survey team conducted a set of correlation analyses. The results show that the lack of knowledge and awareness among workers is closely related to inadequate training.

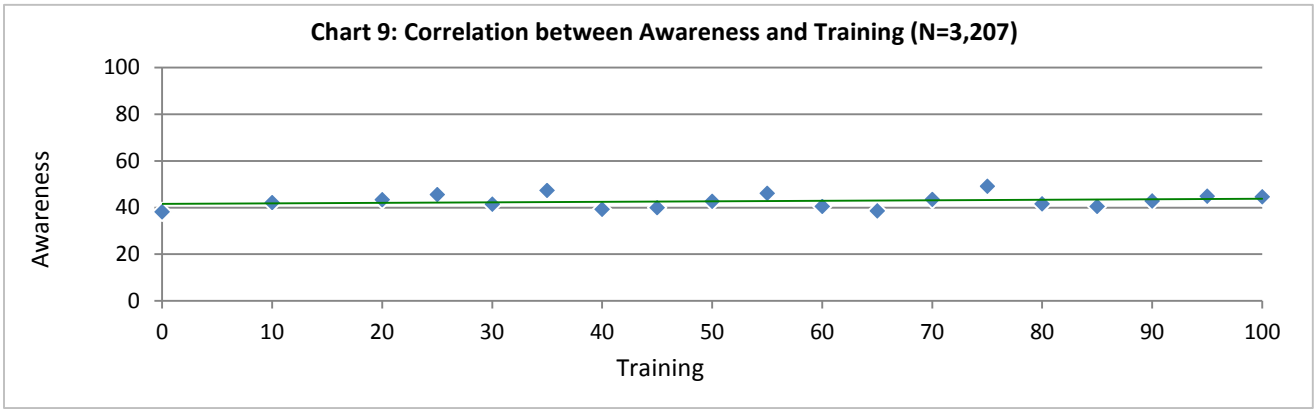
The first analysis shows that knowledge and training are positively correlated, but that the correlation is weak.[10] In other words, the current H&S training appears to only slightly improve worker knowledge, if at all (Chart 7). For example, the data reveals that those workers who received fire hazard and emergency response training know just slightly more than those who received no training at all. The most significant difference we see is in workers' knowledge of what to do when the fire alarm goes off. Here, a slightly greater number of trained workers know how to react correctly (i.e. to calmly leave the building), compared to their untrained colleagues. However, 63% of workers that have received training still do not know the correct answer to this question.

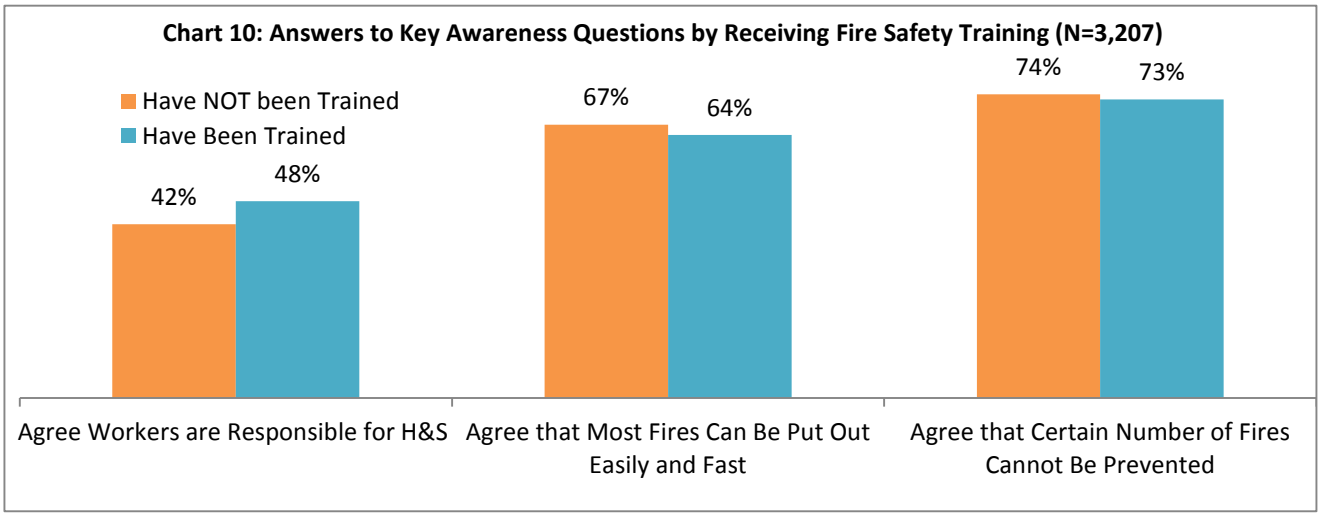




The relationship between training and awareness also fails to show a noteworthy correlation[11]. While a larger number of trained workers (48%) than untrained workers (42%) feel responsible for health and safety at work, training appears to have little impact on how workers view the necessity of fire safety measures[12] (Chart 10).

[10] The correlation between training and knowledge is r=0.129, sig=0.
[11] The correlation between training and awareness is r=0.038, sig=0.05.
[12] One-way ANOVA analysis results show that workers who have been trained and those who have not been trained do not differ significantly in terms of the extent to which they agree with the following statement "Most fires can be put out easily and fast, and do not constitute a threat", the significance level is 0.283.





While the survey did not formally assess training content, FGDs participants comment that the training they received was not very helpful. In reviewing training curricula used in Bangladesh in 2012 and 2013, the research team found the training material to be comprehensive, but also very technical and complex. The survey results suggest that there is a need to better adapt training to workers' needs and level of understanding in order to make it more effective.

One-way ANOVA analysis results show that workers who have been trained and those who have not been trained do not differ significant in terms of the extent to which they agree with the following statement "While health and safety measures are helpful, it is normal that there is a certain number of fatal fires or other accidents that cannot be prevented", the significance level is 0.311.
One-way ANOVA analysis results show that workers who have been trained and those who have not been trained do not differ significant in terms of the extent to which they agree with the following statement "Evacuation drills & safety training should not be organized during peak season as they take too much time and increase the pressure on workers to reach their production target", the significance level is 0.316.

3.6 Fire Safety - Experience

Of those workers who witnessed accidents, 34% report witnessing fire incidents

The need for more frequent and effective fire safety training is also supported by worker's actual experience with fire incidents. Of those workers who witnessed accidents (N=1816), 34% or 618 workers, report witnessing fire incidents. In addition, 64% of surveyed factories (N=625) had more than 10 workers who reported witnessing fire incidents. These numbers are consistent with the findings from FGDs, where participants in 9 out of 10 discussions report experiencing fire incidents at work. The focus groups also provide greater insight into the underlying causes of fire incidents and gaps in existing fire safety practices. Participants mentioned a number of factors including: management refusing to let workers leave the building, improperly installed fire alarms, and locked exits.

FGD participants also note that the fire incidents occurred in the ironing and storage rooms and the canteen. According to participants, two cases resulted in deaths and severe injuries.

In addition to locked exits, focus group members had serious concerns about blocked exit routes. Discussions revealed that the problem is most acute before and during shipping periods, when cartons are left on stairs and hallways.

"When the flame got stronger, we started to run, but found that three out of four exits were closed."

"I don't think I can leave the building safely in case of emergency as the exits are closed most of the time."

---FGD participants

4. Building Safety

65% prefer to work on lower floors, as this allows them to leave the building more swiftly in case of an emergency.

Linked to fire safety is the issue of building safety. The survey questionnaire measured building safety by assessing:

- The extent to which workers feel unsafe at work due to their concerns about building safety;
- Whether workers had experienced any building safety related risks at work

During the FGDs, as part of a simulation game, facilitators asked workers whether they would be willing to work on the top floors of a high building (e.g. 10th and 11th floor) for an additional 1000 taka, or whether they would choose to remain on the same floor. This simulation was used to assess the importance workers place on increased income versus potential security concerns. While some preferred the increase in pay, 65% said that they still would not be willing to work on upper floors, citing safety concerns. These participants communicated that working on higher floors is riskier because it takes longer to get out of the building in case of an emergency.

Facilitators also asked participants to choose between two scenarios to test their perception of building safety (in their current factories). Workers were asked whether they would prefer to (1) work in a new building or (2) stay in their current building and earn an extra 500 taka per month. Most workers chose to stay (62%) because they wanted to stay in their familiar surroundings and would gladly take the additional money. The 38% of participants who preferred to work in a new building cited safety concerns about the "old and fragile" buildings in which they are currently working. Two workers also noted concerns about cracks in the wall in their respective facilities.

The survey also assesses the extent to which workers feel safe at work in general, and the extent to which building safety is a factor. On a scale of 1 to 5 (with 1 meaning "very unsafe" and 5 meaning "very safe"), 25% of survey respondents give a score of 3 or lower—indicating they feel unsafe. Building safety is only ranked 4th when asked why workers feel unsafe (see 5.4).

25% of workers feel 'unsafe' in their factories. While workers cite building safety as a concern, they are more worried about not being able to

Our analysis of survey data and workers' comments during the FGDs, does not offer a conclusive picture of workers' concerns about building safety. While there clearly are some concerns, building safety does not seem to be the top concern of the majority of workers.

"Life is more important than money. If there was an accident, it would be tough to get out in time."

"I think the building is about 15-20 years old, and it becomes fragile. It would be safer to work in a new building."

---FGD participants

5. Other Health and Safety Risks

The survey also evaluates workers' attitude towards and experience with other aspects of health and safety, including the use of personal protective equipment (PPE), the impact of work on their health, and other potential safety risks (e.g. machinery-related accidents).

5.1 The Use of Personal Protective Equipment

> 25% *of FGD participants indicate that they only wear the personal protective equipment when buyers come to visit.*
> 50% *indicate that they have not been trained on the purpose of wearing PPE.*

Use of PPE is likely an important indicator of a factory's health & safety culture. 92% of surveyed workers state that they are provided with PPE to prevent work injuries. These responses are in line with FGD results, where participants say that PPE is offered in most cases. However, 10 FGD participants comment that in some departments, such as finishing, PPE is not always free of charge.

25% of FGD participants say that they only wear PPE when buyers come to visit. Among all surveyed workers, half (50%) indicate that they have not been trained on the purpose of PPE and the correct way to use it. There is also a small but significant correlation between provision of PPE and the number of accidents observed in a factory.[13]

5.2 Impact on Worker Health

> 66% *report regularly feeling body pain after a full day of work.*
> *Workers from sewing and packing departments suffer more from physical pain than their counterparts in other*

A considerable number of workers, that is 36%, feel that their job will negatively affect their health. To further assess the perceived impact of factory work on workers' health, we asked whether, at the end of a working day, they feel any pain in any of their body parts, and, if yes, what type of pain they experience. Two-thirds (66%, N =2100) of surveyed workers report regularly feeling body pain after a full day of work. As seen in Table 5, among those workers experiencing pain, the top issue is neck ache (52%), followed by pain in legs and/or feet (49%) and headaches (45%). These findings indicate that a large majority of surveyed workers perceive that their work is having a negative impact on their health.

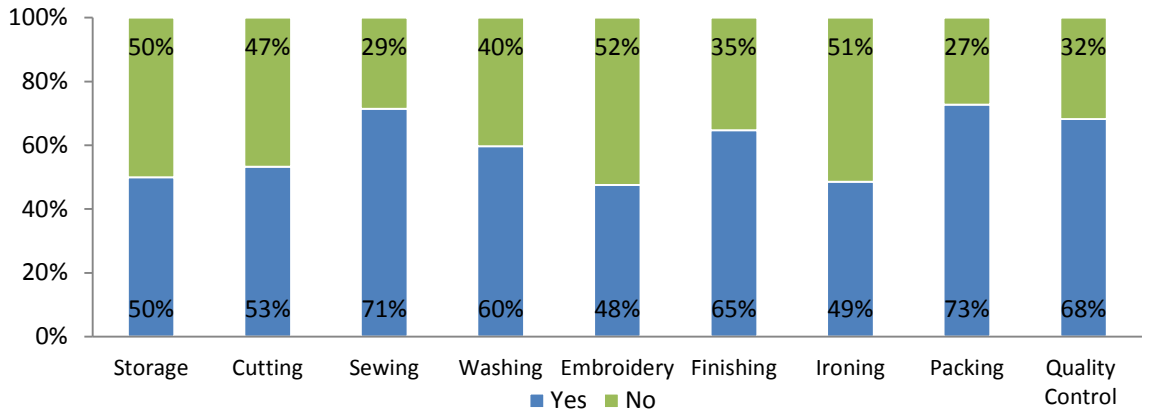
Table 5: Type of Body Pain reported by workers (N= 2,100)

	%	N
Neck Ache	51.8%	1,087
Pain in Legs and/or Feet	48.8%	1,025
Bad Headaches	45%	945
Pain in Arms and/or Hands	38.6%	810
Backache	35.8%	751
Sore Eyes	21.7%	456
Stomachache	20.8%	436
Pain in Waist	17%	356
Pain in Ears	3.5%	74
Skin (Feeling Itchy or Hot)	3.5%	73

[13] The correlation between PPE and number of accidents is significant at r=0.054, sig=0.01

The number of workers who experience pain differs according to the worker's department. Workers from the sewing and packing departments report pain more often than their colleagues in other departments[14]. This finding reflects the difference in the nature of work among different departments. Sewing requires long hours spent in non-ergonomic working positions and packing often requires physically strenuous work.

Chart 11: Do You Feel Pain After a Full Day of Work? (N=3,184)



No. of Cases	60	287	1639	149	246	499	35	55	214

5.3 Other Accidents

57% of surveyed workers report having experienced or witnessed accidents at work. Of these 1816 workers, 83% experienced/witnessed *minor* accidents, and 17% experienced/witnessed *severe* accidents. When asked about the types of accidents, 19% report fire accidents, 34% report machinery-related injuries, and 12% report accidents including electric shock.

Table 6: Types of Accidents Experienced/Witnessed (N= 3207)	%	N
Machinery Injury	34%	1,101
Fire	19%	618
Electric Shock	12%	385
Occupational Disease (Allergies, Chemical Poisoning)	6%	197
Hazardous Material Spills	5%	161

57% of workers have witnessed accidents- the majority indicating that these were minor accidents. The most common accidents are related to machines.

[14] One-Way ANOVA results show that departments differ significantly in terms of pain they feel after a full day of work, significance level is < 0.000.

5.4 Overall Perception of Health & Safety

Further exploration of what causes workers to feel unsafe reveals that they are most worried about not being able to leave the building quickly in case of an emergency (47%); linked to this is the finding that 81 workers (10%) feel unsafe because guards often lock exits.

This primary concern about leaving the building is followed by workers' perception that there is a high risk of fire in their building (30%), concern that they were not provided sufficient training on how to protect themselves (27%), and reservations about the stability and integrity of their building (22%). Lastly, although machinery-related injuries are the most common accidents workers report experiencing/witnessing, the majority (87%) of workers do not believe that machines pose a high safety risk.

One would expect that experience with frequent fires and other accidents would negatively influence a worker's perception of his/her health and safety within the factory. However, as mentioned in the section on building safety, only 25% (n=802) of surveyed workers reported feeling unsafe (based on a scale of 1 – 5). This percentage is relatively low considering comparable surveys of Chinese workers indicate 40% of workers feel their job is a danger to their health and safety. This difference may stem from the fact that Chinese workers, in general are better educated, and therefore, may have greater awareness of potential dangers[15]. With current momentum behind increasing training programs for Bangladeshi workers, it will be interesting to observe whether increased training also leads to an increase in workers' concern for their health and safety.

Table 7: If You Do Not Feel Safe Working in the Factory, Why? (N=802)		
	%	N
I don't think I can leave this building very quickly	47.3%	379
I think there is a high risk of fire in this building	30%	241
I don't feel I was given sufficient training on how to protect myself	27.4%	220
I do not trust that the building structure is stable	22.2%	178
Our machines constitute a high safety risk	12.8%	103
I am afraid that someone in the factory could harm me	10.6%	85
Our security guards often lock exits	10.1%	81

[15] The data on Chinese factories come from ELEVATE worker surveys in China covering more than 50 factories in footwear and electronic industries.

6. Perception of Management & Guards

The survey also examines worker perception of factory guards' and management's handling of H&S issues.

> 86 *workers from 18% of surveyed factories believe the security guards increase the risk of accidents through their behavior. FGDs discussions revealed incidents of management being unsupportive and hindering safety measures.*

The majority of surveyed workers (89%) believe security guards are doing a good job, noting that guards prioritize worker safety in security management. Results also show, however, that certain factories have particular problems with security guards. 86 workers from 18% of surveyed factories[16] believe that security guards increase the risk of accidents through their behavior, such as locking exit doors and turning off fire alarms. This number is in line with the previously mentioned finding that 81 workers feel unsafe because guards often lock exits. Similarly, a number of workers mentioned guards locking exit doors during FGDs. This high-risk practice of locking exit doors is fairly prevalent, occurring in nearly one-fifth of surveyed factories very risky.

To gauge perception of management's concern for health and safety, the survey asked workers to rate management's level of commitment on a scale of 1 (lowest) to 10 (highest). The results show that:

- Approximately 80% of workers scored management at 8 or higher on the topic of whether management cares about factory health and safety.
- A similar number (76%) gave management a score of 8 or higher in judging its concern about worker health (e.g. preventing illness, overwork, etc.).

In contrast to the positive perception of management's concern for health and safety expressed in the survey, the FGDs revealed a range of anecdotes in which management was not supportive of workers that had voiced safety concerns and/or were negligent about workers safety measures.

[16] In 18% of surveyed factories more than 8 workers point out that the security guards in their factory increases the risk of accidents.

7. Worker Integration in Health and Safety Management

As previously mentioned, the survey exposes considerable gaps in workers' awareness of fire safety and reveals a feeling that they have limited ability to contribute to better safety conditions within the factory. Research has found that integrating workers into a factory's health and safety decision-making processes enhances their feelings of responsibility for and confidence in health and safety matters[17].

The survey, therefore, includes a range of questions to assess the level to which workers feel integrated into decision-making processes. Questions measure:

- Participation of workers in factory health & safety programs
- Inclusion of worker representatives on H&S or fire safety committees (where applicable)
- Level of contact that workers have with worker representatives
- Existence of key elements of "bottom-up" communication; and
- Handling of grievances and complaints

Health and safety committees are nearly universally implemented in surveyed factories (92%), but lack elected worker representatives (39%). Further, FGDs reveal that committees are often inactive and are not supported by management.

7.1 Worker Committees

92% of surveyed workers indicate there is an H&S or fire safety committee in their factory. When asked about the composition and activity of these committees, 88% of respondents say that worker representatives are part of these committees, and 59% indicate having participated in activities organized by these committees. While these numbers are positive, results also show that workers elect only 39% of representatives, while management appoints 53%. 78% of those respondents, who say their factories include worker representatives on committees, claim they know how to reach the representative, and 66% say they have contacted the representative about H&S issues.

The FGD findings offer more insight into how the worker committees function. Feedback by participants suggests that worker committees may not be as active or inclusive as the survey numbers suggest. Despite the existence of worker committees, several FGD participants point out that the committees in their factories are inactive or semi-active, and that management is often not supportive of the committee activities.

[17] Statement based on ELEVATE data based on more than 35'000 surveyed workers in China & South Asia.

7.2 Bottom- Up Communication on H&S Issues

Nearly all surveyed workers say they are willing to voice their concerns on health and safety issues, and nearly half have done so. Most workers (74.9) prefer to speak with their supervisors instead of consulting with their worker representatives (17.2%).

In addition to formal worker committees, the survey measures the extent to which workers are willing to speak up. Almost all (98%) of surveyed workers say that they would be willing to speak up about health and safety related risks. The large majority (75%) prefer to voice concerns by talking to their supervisors, followed by talking to the H&S personnel (48%), and then by using the suggestion box (34%). Surprisingly, results reveal that surveyed workers do not prefer to talk with their worker representatives nor use external channels, like 3rd party hotlines to voice their concerns.

These findings suggest that despite the wide existence of H&S worker committees and worker representatives, their ability to function as a bridge between worker and management is limited. Supervisors are more likely to receive worker H&S-related concerns. This is also very much in line with other worker survey results that have similarly found that supervisors are the channel most preferred by workers to voice complaints and concerns, no matter what the topic. This result speaks to the importance of training supervisors on how to deal with worker suggestions, complaints, and concerns.

Table 8: Which Channel Would You Use? (N=3,130)

	%	N
I would talk to the supervisor	74.9%	2,344
I would talk to the health and safety personnel	47.7%	1,494
I would use the suggestion box	34.2%	1,072
I would talk to one of the security personnel	30.9%	967
I would talk to a department manager or a general manager	27.9%	872
I would talk to the human resources department	26.6%	834
I would talk to a worker representative, to the Union or the Union representative	17.2%	537
I would call/SMS the clients/brands/3rd party hotline	8.8%	275

With regard to actual complaints, nearly half of surveyed workers (45%) say they have voiced concerns on health and safety issues and a large majority of these workers (65%) say they spoke up more than once. Most workers (approximately 80%) who raised concerns say they are happy about the way in which their issues were treated and solved. A smaller number of workers say that they feel their concerns were not treated seriously (13%), nor appropriately handled (14%).

8. Risk Groups

In this section, we explore potential differences between groups of workers to better understand if any groups are at a particular risk with regard to H&S and fire safety.

8.1 Female Workers

Female workers receive less training than male workers, and demonstrate lower levels of knowledge and awareness on fire safety. Data analysis shows that such discrepancy is closely related to the fact that male workers are better educated than female workers.

During FGDs, workers reported that male workers are preferred over female workers for receiving health and safety training. This finding is in line with survey data that showed that 60% of male workers had been trained on fire safety, while the percentage among their female counterparts is lower at 52%. The difference is statistically significant[18]. This discrepancy in training received by male and female workers is also reflected on their level of knowledge and awareness[19]. Female surveyed workers had a harder time than male respondents in correctly identifying fire hazards and had poorer knowledge of what actions to take in response to a fire alarm. Female workers are also more likely to underestimate the importance of fire safety measures than their male colleagues and are more pessimistic about the possibility of preventing fatal fires.

Chart 13: Answered Key Knowledge Questions

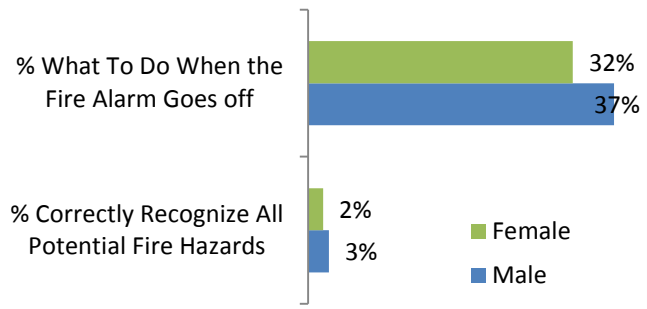
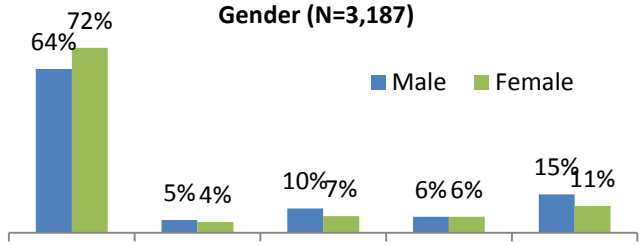


Chart 14: Do You Agree or Disagree That A Certain Number of Fatal Fires Cannot Be Prevented? -By Gender (N=3,187)

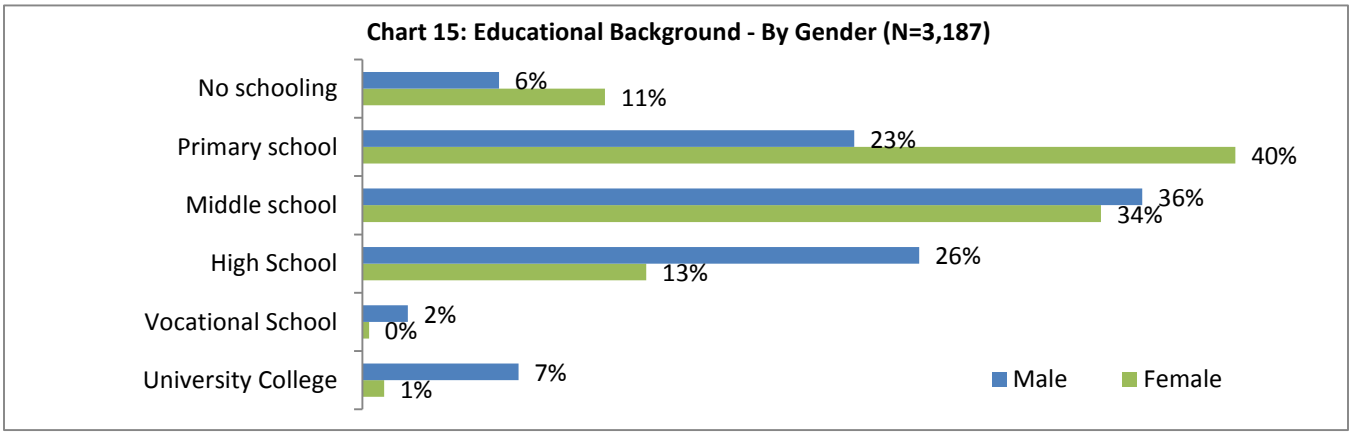


[18] One-way ANOVA results show that male and female workers differ significantly in terms of receiving fire safety training, the significance level is 0.000.

[19] One-way ANOVA analysis shows that male and female workers differ significantly in terms of knowledge. The significance level is 0.000. One-way ANOVA analysis results show that male and female workers differ significantly in terms of awareness. The significance level is 0.034.

8.2 Workers with Lower Levels of Education

The difference by gender with regards to knowledge and awareness is significantly affected by the fact that male workers are generally better educated than female workers. Only 48% of surveyed female workers received schooling beyond primary school, compared with 71% of male workers. The importance of gender with regards to knowledge and awareness weakened significantly when controlled for educational background[20]. In other words, the difference in education level is strongly related to the discrepancy between male and female workers.



8.3Juvenile Workers:

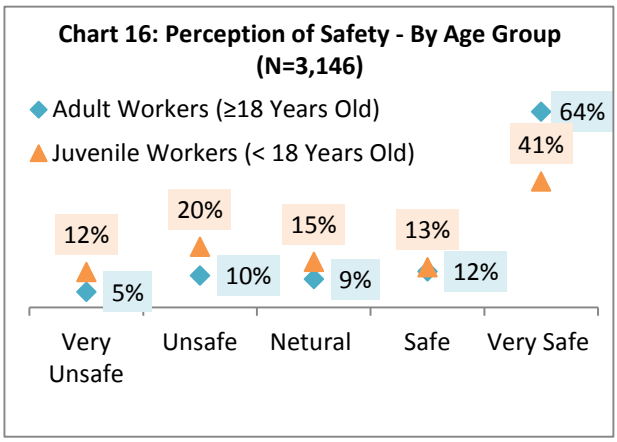
If we compare different age groups, we notice no significant difference between younger and older workers with regard to health and safety knowledge, awareness and training. In other words, surveyed workers of different age groups do not differ significantly in terms of their level of understanding of fire safety issues. However, the data does show that juvenile workers (ages 14 to 17) feel their work constitutes a bigger health risk than adult workers.[21]

Juvenile workers (ages 14 to 17) feel their jobs constitute a larger health risk than adult workers.

Table 9: Why Do You Feel Unsafe Working in the Factory? – By Age Group				
	Juvenile		Adult	
	%	N	%	N
I don't think I can leave this building very quickly	60.7%	17	46.8%	362
I think there is a high risk of fire in this building	53.6%	15	29.2%	226
I don't feel I was given sufficient training on how to protect myself	21.4%	6	27.6%	214
I do not trust that the building structure is stable	25%	7	22.1%	171
Our machines constitute a high safety risk	14.3%	4	12.8%	99
I'm afraid that someone in the factory will harm me	7.1%	2	10.7%	83
Our security guards often lock exits	28.6%	8	9.4%	73

[20] ANCOVA analysis results show that if we control education background, the significance level of male and female difference in terms of knowledge is 0.035. ANCOVA analysis results show that if we control education background, the significance level of male and female difference in terms of awareness is 0.09.

[21] One-way ANOVA results show that juvenile workers differ significantly from adult workers. The significance level is 0.01.

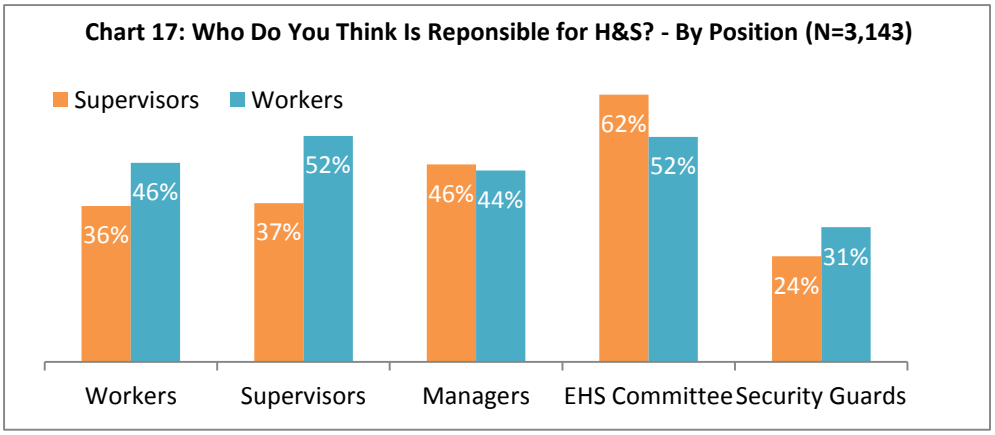


Of juvenile workers (under the age of 18) surveyed, 31% consider their current job to be "very unsafe" or "unsafe", whereas the percentage among adult workers is 15%. Close to half (49%) of juvenile workers think their job will negatively affect their health, whereas only 35% of adult workers share the same concern. Younger workers voiced greater concerns with the fire and building safety. A larger proportion of them are concerned that security guards in their factories lock exits (29%), while only 9% of adult workers report the same situation.

8.4 Supervisors:

Supervisors show a limited level of awareness on workers' and their own role in promoting a safe and healthy work environment.

As discussed earlier, supervisors play an important role in bridging workers and management. Most workers prefer to communicate their health and safety concerns to their supervisors instead of through other types of channels. Supervisors' knowledge and awareness of fire safety affects how they respond to worker feedback. For example, if supervisors do not think workers play an important role in fire safety management, they will likely not take workers' concerns seriously. Likewise, if supervisors do not have knowledge of potential fire hazards, they are unlikely to follow up on workers who identify risks. Survey results show that supervisors do appear to have a slightly better—but still insufficient—knowledge of fire safety, especially with regard to emergency actions[22]. About 72% of surveyed supervisors know how to correctly react to emergencies, whereas the percentage is 61% among frontline workers. There is, however, no statistically significant difference in the level of awareness between supervisors and workers[23].

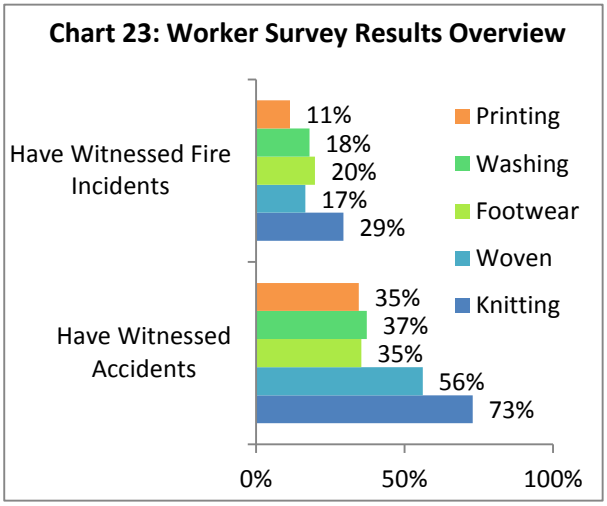


Interestingly, supervisors tend to think health and safety is the job of the EHS committee and factory management, and put less responsibility on workers and themselves. In fact, more workers (46%) than supervisors (37%) take personal responsibility for ensuring a safe and healthy work environment (chart 17).

[22] One-way ANOVA analysis results show that workers and supervisors differ significantly in terms of knowledge on fire safety. The significance level is 0.018.

[23] One-way ANOVA analysis results show that supervisors and workers do not differ significantly in terms of awareness on fire safety. The significance level is 0.587.

8.5 Differences between Products Type



Workers from knitting factories or departments report a significantly higher number of accidents and fire incidents.

The survey data also shows a statistical difference among workers producing different product types. Workers from knitting factories or departments are significantly more likely to witness or experience fire incidents in the factory, whereas the accident frequency is considerably smaller in washing and printing factories/departments.

These observed differences by product type offer some insight into the relative areas of risk in the RMG sector.

9. Summary and Conclusions

This worker survey on Bangladesh Worker Fire Safety was one of the first tangible project activities of the Alliance for Bangladesh Worker Safety. Conducted before the launch of the Alliance's programmatic activities—it provides an important baseline from which to measure and inform upcoming project activities.

To summarize the most important and striking results of this survey:

- Surveyed workers show considerable gaps in their knowledge and awareness of fire safety. Some very basic knowledge (e.g. what constitutes a fire hazard and what to do in case of a fire incident) is lacking among a large percentage of workers. Related to this, workers also have a limited sense of responsibility and empowerment to prevent fires.
- Training has had very limited impact on workers' knowledge, and even less so on awareness. The result is interpreted as an indication that training materials are too technical and do not sufficiently consider workers' education level and information needs.
- Less educated female workers are most vulnerable to potential fire safety risks; they receive less training and are considerably less informed than better educated male workers.
- The survey further shows that worker participation structures are commonplace in factories, but the majority of worker representatives on health and safety committees are not elected. In addition, FGDs reveal that committees are often inactive or not supported by management.
- In the absence of a functioning worker representative structure, supervisors are the number one channel for complaints and concerns. In light of the tendency of supervisors to show a low sense of responsibility for and awareness of risk prevention, there is a great risk that workers that report fire safety concerns to their supervisors will not get adequate responses and follow-up.
- Lastly, the survey reveals the interesting fact that while workers in general are not too concerned about their health or safety (a result likely to be related to their limited knowledge & awareness), young workers show a greater concern for both their health and their safety. This is a potential indicator that there is a new, younger generation of Bangladeshi workers that is more concerned about how their work impacts their health.

The Alliance for Bangladesh Worker Safety will carefully analyze the survey results and a range of activities such as round tables are planned to make sure these results are taken in account. In the meantime, below are initial suggestions based on the presented results:

- Design training programs according to workers education levels and focus much more on basic fire safety knowledge. Reduce technical and complex content and carefully test effectiveness among workers.
- Develop training content that focuses on both knowledge and awareness in order to (1) help workers understand the basics and (2) reinforce their view of fire safety as both a responsibility and a right.
- Ensure training courses include sufficient female representation.
- Combine training activities with strong worker participation measures to promote worker empowerment. Facilitate worker involvement in training activities alongside participation in factory's H&S and Fire Safety Committees
- Prioritize the development of training for supervisors and guards, given their key role in fire prevention.
- Given the high fire risks involved in knitting, prioritize knitwear factories and departments both for training and assessment activities.
- Promote H&S activities for juvenile workers in order to build the next generation of Safety Ambassadors

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