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INFLUENTIAL FACTORS CONTRIBUTING TO FALL HAZARD IN THE CONSTRUCTION SITES IN BANGLADESH

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ABSTRACT

Falls are one of the major causes of unintentional injury, deaths in the world and pose a critical threat to occupational safety, particularly in the construction industry. Worldwide, falls account for 684,000 lives per year with construction industry being responsible for 38% of the cases. According to the latest statistics, in Bangladesh alone, 185 construction worker deaths were recorded, of which 70 solely resulted from falling. Therefore, it is imperative to address the issue. This study investigates the root causes of fall hazards at construction sites in Bangladesh. The data collection was carried out through a questionnaire and physical survey of ten construction sites within Dhaka city. 20 items of questions divided into 7 Groups of Factors were developed through an extensive literature review. The data from the questionnaire survey were then analyzed through SPSS 27 statistical software to measure descriptive statistics; reliability and validity were measured by Cronbach's α and Spearman-Brown coefficient. Later on, from the physical survey risk metrics was generated. Finally, this study suggests regular workplace inspections, improved enforcement of OSH regulations, safety awareness campaigns, and development/integration of site-specific training programs, along with technological innovations such as drones and wearable sensors to curb the fall hazards. Synergizing these initiatives with Sustainable Development Goals 3 (Good Health and Well-Being) and 8 (Decent Work and Economic Growth) will build safer workplaces, reducing deaths and enabling the construction industry return on economic sustainability for Bangladesh.

Keywords: *Fall Hazard, Occupational Health and Safety Laws, Potential Factor of Falls, Hazard Identification, Risk Analysis, Risk Control (HIRARC), Safety Measures.*

1. INTRODUCTION

Globally, falls are expected to claim the lives of 684000 people annually (World Health Organization: WHO, 2021). Fall hazard is a serious threat to occupational safety and public health since it is the second leading cause of unintentional injury deaths worldwide. The construction sector is particularly dangerous because of its dynamic and high-risk nature. According to the ILO (2022), falls are the number one cause of death in the global construction industry, representing approximately 38% of all deaths in this sector. The situation is especially dire in Bangladesh. The construction sector, a vital contributor to the nation's economic growth, is plagued by inadequate safety measures and enforcement mechanisms, leading to a high prevalence of fall-related accidents. Recent statistics from the Safety and Rights Society (SRS, 2024) reveal that in 2023, out of 875 workplace fatalities recorded in Bangladesh, 185 occurred in the construction industry, with 70 deaths directly attributed to falls. During the same period of 2022, 712 workplace fatalities were reported across all sectors, where 45 deaths related to falls from height. These numbers indicate that specific actions are urgently needed to reduce falls in the construction sector in Bangladesh. In addition, accidents result in a loss of capital, productivity, additional investment compensation, and time (for legal proceedings) ranging from 0 to 100%. These activities are detrimental to the construction industry because human resources are essential to the sector (Hallowell & Gambatese, 2009).

Moreover, the significance of addressing fall hazards is underscored by its alignment with the United Nations Sustainable Development Goals (SDGs). Specifically, SDG 8 (Decent Work and Economic Growth) and SDG 3 (Good Health and Well-being) both relate to promoting safe working environments as a means of promoting economic and social development. Achieving these targets requires reducing workplace fatalities and injuries, thereby enhancing worker's well-being and industry sustainability. Internationally, nations like Sweden and Singapore, which have established robust occupational safety and health (OSH) regulations, have proven the positive impact of well-designed safety systems in decreasing fall fatalities by 77-98% (ILO, 2022). In contrast,

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Bangladesh is experiencing a rising gap in implementing and enforcing safety measures, resulting in unnecessary loss of life and production. This research seeks to bridge this gap by identifying key factors contributing to fall hazards and evaluating strategies for mitigation.

The following objectives have been emphasized in this study to accomplish the goal:

- To understand the laws and regulation set by the government of Bangladesh regarding Occupational Safety and Health (OSH).
- To determine the potential causes that contribute to fall hazards in construction sites and analyse the survey data through SPSS-27 statistical software for measurement of descriptive statistics, reliability and validity.
- To understand HIRA process and risk metrics.
- To suggest approaches which can help to reduce fall hazard rates in construction sites.
- To study HIRARC and The Hierarchy of Risk Control processes for risk management.

2. LITERATURE REVIEW

2.1 Fall Hazard

A fall hazard refers to any circumstance or condition that increases the risk of a person falling, leading to potential injury or fatality. Fall hazards are common in several areas, especially in workplaces. For instance, at a construction site, people are at high risk due to uneven surfaces, edges not protected, scaffolding, and ladders (World Health Organization [WHO], 2021). In the construction industry, fall hazards can occur due to poor precautions, improper use of PPEs, or lack of proper training.

2.2 Fall Hazard in The Global and Bangladeshi Context

Suraji et al. (2020) found that while there is a huge difference in reporting between developed and developing countries, the latter reported falls as the primary cause of construction-related fatalities. In the developed country such as The United States, falls are identified as the leading cause of construction fatalities. OSHA (Occupational Safety and Health Administration) has laid down certain guidelines, which include guardrails and fall arrest systems and has brought down the number of fatalities in affected workplaces (BLS, 2022). In European countries, which have strict sets of rules and regulations and it has been seen that fall fatality rate has decreased in the past decade (Wilson et al., 2020).

However, in the developing country like Bangladesh, about 80 percent of the construction workers are informal (ILO, 2020). In formal sector work, it is quite often that it is not regulated and thus, workers have no protection from risks like falls (Faruque et al., 2020). Therefore, workers receive minimal or no formal safety training. Studies emphasize the need for site-specific training that covers fall prevention measures and emergency responses (Rahim et al., 2018). Hasan et al. (2017) reported that most workers do not have access to helmets, harnesses or proper footwear. Employers perceive these as unnecessary expenses, particularly in low-budget projects. On the other hand, unlike developed nations, Bangladesh has not significantly adopted advanced safety technologies like drones, sensors, or Building Information Modeling (BIM) to identify and mitigate risks (Nasir et al., 2021).

2.3 Classification of Fall Hazard in Construction Sites

Table 1: Types of fall hazard

Types of Fall Hazard	Example
Falling from a height	Falls from groundwork, falls from a ladder, slipped from a ladder.
Falls from elevation	Falling by slipping tripped or falling to the ground/ floor/ lower level.

According to the Occupational Safety and Health Administration (OSHA), Table 1 categorizes various fall hazards commonly found on construction sites, including: (i) Fall from platform /scaffolder (ii)Fall from ladder; (iii) Fall from piled matter; (iv) Fall from stairs; (v) Fall into openings; (vi) Fall from roof; (vii) Fall to lower level.

3. LAWS OF OSH IN BANGLADESH

Workplace hazard poses a significant threat to workers and employees in Bangladesh as every year numerous workers lose their lives, causing serious injuries. Therefore, the Government of Bangladesh is very much concerned about the Occupational Safety and Health (OSH) of the workers. The Bangladesh Labor Law of 2006

is the principal law that sets forth standards for occupational safety and health as well as financial compensation for mishaps and injuries suffered in the workplace. There are multiple provisions in that regard. Sections 51 to 60 illustrate health and hygiene and sections 61 to 78 illustrate the safety of workers in workplaces (Bangladesh Labor Law, 2006). Later on, Bangladesh Labor Law was amended in 2013 and added some new provisions to increase safety in workplaces e.g. entry to walkways, stairs, etc. for workers (section 72); mandatory use of personal protective equipment (section 78a); notification to the appropriate authority in the event of an incident (section 80) and a new section on the formation of a safety committee (section 90a) (Bangladesh Labor Law Amendment, 2013).

Despite of having Bangladesh Labor Law (2006 and amendment 2013) government formulated and adopted the National Occupational Safety and Health (OSH) Policy on 5th November 2013, a dedicated policy towards OSH (National OSH Policy, 2013). The OSH policy is made to acknowledge the essentiality and significance of ensuring the safety and health of employees within the workplace, consequently enhancing overall productivity. Throughout the OSH policy, strongly emphasizes different aspects of worker safety in the workplace. Particularly, clause 4.d.1: to ensure maximum safety during construction, clause 4.d.2: to identify all the risks, and potential causes of those accidents and orientate all the workers, clause 4.d.3: to provide personal protective equipment by the employee where risk can't be mitigated, clause 4.d.9: to prepare safety committee, clause 4.d.13: to ensure treatment and compensation after an accident, clause 4.d.9: to keep all OSH related records e.g. accidents, injuries, death, treatment, compensation, cases, and decision. Later on, the Department of Inspection for Factories and Establishments (DIFE) made a National OSH profile in 2016 based on OSH policy (2013) and later updated in 2019.

In addition, various laws in the country contain provisions related to occupational Safety and Health (OSH), including the Fire Prevention and Extinguishing Act (2003), the Bangladesh National Building Code (2022), and the Labor Welfare Foundation Act (2006).

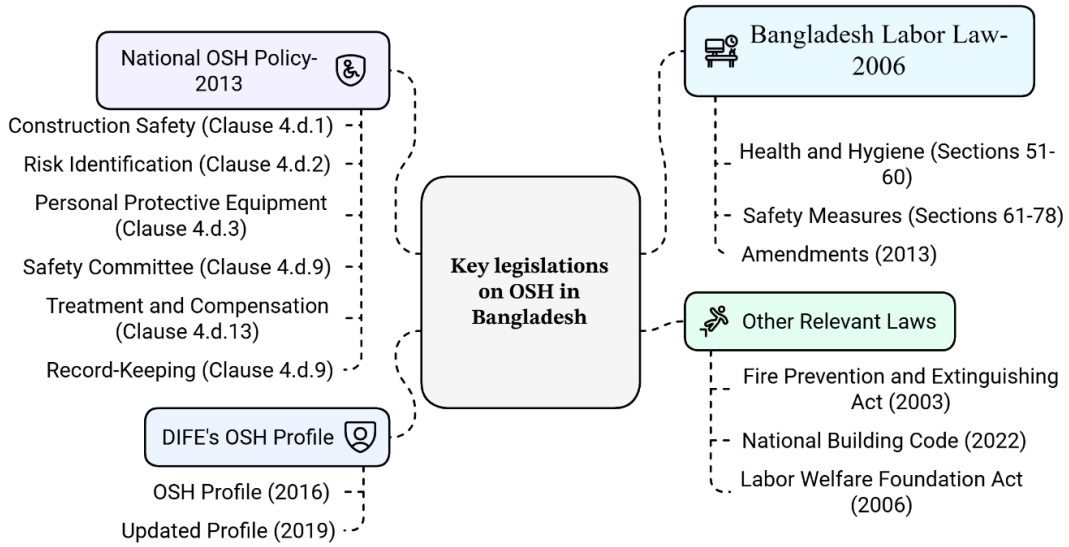

Figure 1: Overview of the key OSH laws and its provisions

4. POTENTIAL FACTORS OF FALL HAZARD AT CONSTRUCTION SITES

From the literature review and extensive study (e.g. articles, journals, magazines, books, and internet) some potential factors are identified as reason of fall hazards in construction sites of Bangladesh. The factors are follows:

4.1 Unsafe Working Conditions

Falls on construction sites in Bangladesh occur mainly due to improper scaffolding, open edges, poor housekeeping, wet surfaces, loose debris and inadequate maintenance, making high-elevation work particularly hazardous.

4.2 Unsafe Work Practice

Unsafe work practices, such as ignoring safety measures, rushing or working while fatigued, neglecting fall protection equipment, improper ladder or scaffold use significantly increase the risk of falls, leading to severe injuries or fatalities.

4.3 Weather Conditions

Adverse weather conditions such as high winds or rain can reduce the visibility of construction workers or may create slippery surfaces that increase the probability of falls. Those issues generally occur during the rainy season in Bangladesh. The rainy season here lasts from April to September, and the country receives most of its rainfall during this time. The average annual rainfall is 2,200 millimeters (mm); however, it can vary from 1,000 mm in the west to more than 2,800 mm in the east and south (World Bank Climate Change Knowledge Portal). Generally, 80% rainfall is observed in the monsoon season in the country. Due to heavy rain, construction works at heights during this period are very risky.

4.4 Overloading

Another prime concern at construction sites is overloading, particularly when it comes to structures like scaffolding and elevated platforms. When these structures are subjected to more load than they are designed to support overloading occurs. These things lead to collapse or failure, resulting in serious injuries or fatalities.

4.5 Communication Barrier

Falls in construction often result from communication barriers like unclear information, poor communication channels and language issues. Many workers struggle with literacy, hindering their ability to interpret safety signs, interact effectively and understand crucial safety instructions.

4.6 Management Issue

Management's failure to provide adequate PPE, safety equipment, and training significantly increases fall hazards on construction sites. Poor communication between safety directors and workers further contributes to accidents, as highlighted in prior research by Liy et al. (2017).

5. RESEARCH METHODOLOGY

A brief outline of the study methodology is provided in this section. The data used in this study can be divided into two categories: primary and secondary data. Primary data refers to quantitative information obtained through questionnaires and physical survey. Secondary data are collected from extensive studies of related articles, journals, magazines, books and the internet. Questionnaires are generated on the basis of secondary data.

5.1 Site Selection

The study was conducted in the capital city of Dhaka, Bangladesh. To understand the safety climate in terms of fall hazards randomly ten middle-rise construction sites were selected, having a height within the range of six to fifteen storied. In terms of occupancy, five of them are residential, three are fully commercial and two are mixed-use. Since most of the buildings in Bangladesh are in that height range and occupancy, therefore, assumed that the selected ten construction sites will cover the whole construction sectors in the country.

5.2 Sampling and Questionnaire

In the beginning, workers who are potentially exposed to fall hazards in the construction sites were identified. 95 respondents were chosen from the workers who have working experience of more than three years. Among them, 65 workers agreed to participate in the questionnaire survey. Table 2 shows the demographics of agreed workers.

Table 2: Demographics of agreed workers for the questionnaire survey

Variable	Number	%
Work Experience > 3 years		
Male	61	93.85
Female	04	6.15
Age (years)		
20-30 Y	53	81.54
30-45 Y	12	18.46
Experienced accidents in past		
Yes	46	70.77
No	19	29.23

For the questionnaire survey, 20 items of questions were generated under six Group of Factors (GoFs) on fall hazard. Every question was scored based on a five-point Likert Scale rating from 1 to 5 (1: Strongly Disagree, 2:

Disagree, 3: Neutral, 4: Agree, 5: Strongly Agree). All the questions were provided to the workers in Bangla but for better understanding, those are presented here in English language. APPENDIX-A represents the questionnaire.

5.3 Data Analysis

Data from the questionnaire survey was analyzed by using SPSS 27 statistics software. Descriptive statistics (Mean, Standard Deviation) were calculated by analyzing the Likert scale response. Later on, two reliability tools were used to measure the reliability, named Cronbach's α, and Spearman-Brown coefficient. Cronbach's α represents internal consistency among items within the group of factors (GoFs). At the same time, the Spearman-Brown coefficient is also widely used in questionnaire surveys to assess reliability. In this process to measure internal consistency among questionnaire, the questions are divided into two sets (split-half).

6. RESULTS AND DISCUSSION

Due to the large number of data lines, the workers' responses to fall hazard questions are analyzed and presented in Table 3. The analysis involved calculating the Mean (M) and Standard Deviation (SD) of the responses for each item to identify tendencies and variability. Here for Likert scale response, the highest mean (M) score was observed 4.8182 for the item of question GoF 1.2, indicating a strong agreement among participants. Conversely, the item GoF 1.5 yielded the lowest mean score 3.6364, reflecting quite divergent opinions. Here, standard deviation (SD) of each item of question related to fall hazard varies 0.3289 to 0.5734. This finding revealed high consistency in responses with standard deviations below 0.6, suggesting shared perceptions among participants.

Table 3: Response to Fall Hazard Questions by Construction Workers

Item	Descriptive Statistics		Item	Descriptive Statistics	
	Mean	Standard Deviation		Mean	Standard Deviation
GoF-1.1	4.5132	0.4351	GoF-3.2	4.2727	0.5584
GoF-1.2	4.8182	0.3947	GoF-3.3	4.0455	0.5734
GoF-1.3	4.6453	0.4387	GoF-4.1	4.1818	0.4650
GoF-1.4	4.4091	0.5032	GoF-4.2	4.5909	0.5033
GoF-1.5	3.6364	0.5579	GoF-4.3	3.9545	0.4573
GoF-1.6	4.6125	0.3678	GoF-5.1	4.1818	0.4977
GoF-2.1	4.1876	0.4136	GoF-5.2	4.0909	0.3694
GoF-2.2	4.5909	0.5032	GoF-6.1	4.6368	0.5124
GoF-2.3	4.8182	0.3947	GoF-6.2	4.4091	0.3032
GoF-3.1	4.1647	0.3289	GoF-6.3	4.1364	0.5125

The measurement method of reliability depends on its internal consistency. Already mentioned that internal consistency here was assessed through Cronbach's α and Spearman–Brown coefficient. According to Cronbach's α, internal consistency was observed among the group of factors (GoF) within the range of 0.664 to 0.889. The Spearman-Brown coefficient was observed within the range of 0.674 to 0.925. Most coefficients were higher than .70 which meet the psychometric standards for a measurement. Table 4 shows each coefficient of the fall hazard group of factors (GoFs).

Table 4: Inter consistency Coefficients of the Group of Factors (GoFs)

GoF	Number of Items	Cronbach's α	Spearman-Brown Coefficient
GoF 1	6	0.715	0.734
GoF 2	3	0.664	0.674
GoF 3	3	0.824	0.834
GoF 4	3	0.721	0.705
GoF 5	2	0.889	0.925
GoF 6	3	0.781	0.819

Notes. GoF1 = Unsafe Working Conditions, GoF2 = Unsafe Work Practice, GoF3 = Weather Conditions, GoF4 = Overloading, GoF5 = Communication Barrier, GoF6= Management Issue

7. HAZARD IDENTIFICATION AND RISK ASSESMENT (HIRA)

Here, Hazard Identification and Risk Assessment (HIRA) study had been conducted based on physical survey to understand those factors in details. HIRA's primary goal is to find all potential risks that could cause employee injuries and figure out how likely it is for harm to happen in a particular situation. Table 5 & Table 6 shows the probability and severity rating of HIRA respectively, where rating 1 is low and 4 is high.

Table 5: Probability rating [Salim et al., 2017]

Assessing Probability	Rating
Highly Unlikely, Probably Never Will, Yearly	1
Unlikely, Rarely, 6 months	2
Likely, Occasionally, Monthly	3
Very Likely, Frequently, Daily	4

Table 6: Severity rating [Salim et al., 2017]

Severity (injury/accident/illness)	Description	Rating
First Aid (Injury/Illness)	No lost work time due to a minor illness or injury requiring first aid alone.	1
Minimal Illness/Minor Injury with No Lost Time in work	Mild illness or injury; needed emergency medical attention.	2
Major Injury/Major Illness/ Permanent Disability/Lost TimeInjury	Serious injury in body or permanent/ absence in work for a long time	3
Fatality	Death	4

Management research suggests that risk assessment can be determined by evaluating the product of a hazard's probability of occurrence and its potential severity (Haimes, 2011). On that basis, the risk metrics in Table 7 was developed based on physical survey to evaluate and rank fall hazards observed on construction sites. The findings were then plotted into a metrics grid, where risks were categorized as low, medium and high. Here, the elements that could have an impact on the worker were attempted to be identify.

Table 7: Risk metrics as per physical survey

RISK METRICS				
Hazard Name	**Probability (rating 1-4)**	**Severity (rating 1-4)**	**Risk Assessment**	**Risk Level**
Poor site housekeeping	2	2	4	**Rating Score** (i) 1 to 4= Low Risk (ii) 6 to 9= Medium Risk (iii) 10 to 16= High Risk
Working at crowded space	3	1	3	
Working at high level (expose to high level)	2	3	6	
Bad weather (rainy/windy)	4	3	12	
Poor warning signage toindicate hole at ahead	3	2	6	
Fall from platform / scaffolder (without wear PPE)	4	4	16	
fall from ladder (Improper use of tools/equipment's)	3	3	9	
Fall from piled matter	3	3	9	
Inadequate knowledge of safety information and warning signs	2	2	4	
Lack of education (safety Training, OSH rules)	2	3	6	
No safety inspection	**2**	**2**	**4**	

8. TYPICAL MEASURES TO REDUCE FALL HAZARD

8.1 Fall Protection System

The majority of respondents strongly agreed that the best ways to reduce fall hazards on construction sites are to have enough personal protective equipment (PPE) available and to fix barriers like guardrails and handrails.

Employers are required to give workers enough protective gear that is suitable for the activities at hand. It will shield the employees from the possibility of falling (Mokoena, 2016). This is because each form of PPE has a unique purpose and is only appropriate for a particular set of tasks. Improper use of personal protection equipment can also cause falls because that will not be effective when needed. According to Chi, Chang & Ting (2005), fixing faulty barriers or replacing them will also play a vital role in reducing falls due to them.

8.2 Training Facilities

Training is important for all workers, especially for the new ones. Workers can learn about safety through training on using personal protective equipment, maintaining roofs, working at heights, housekeeping and cleanliness. This will also increase the level of awareness which can reduce the possibility of fall hazards. Management commitment and daily toolbox briefings can enhance the effectiveness of training. According to prior research, management pledges have a crucial role in influencing employee attitudes. Employees are more inclined to participate in training when there is management commitment and they have the option to speak up during daily toolbox briefings (Jensen, Lundin-Olsson, Nyberg, & Gustafson, 2002).

8.3 Enforcement of Acts, Regulations and Guidelines

Most of the respondents strongly agreed that the number of fall accidents in construction sites would be reduced if government agencies strongly enforce laws, regulations and regularly supervise construction sites accordingly. Imposing certain standard obligations on employers and workers when needed can contribute to the preservation of health and safety on construction sites.

8.4 Workplace Inspection

Fall hazards can be reduced through weekly workplace inspections using a checklist (employees, materials, environment, and site management). Regular assessments help maintain a hazard-free and well-maintained workplace. By doing a weekly workplace inspection, any issues can be found right away and steps can be taken to prevent falls. Using a checklist helps to guarantee that necessary supplies or tools are available when working (Liy, Ibrahim, Affandi, Rosli & Nawi, 2016).

Figure 2: Safety Toolkits and their safe use

8.5 Safety Awareness and Fall Prevention Campaign

Safety awareness campaigns can help a lot to raise the level of awareness among the construction workers about falls. Using banners and posters to share safety and health messages can help with this process. Employers and interviewees overwhelmingly concurred that this is the best approach for distributing messages among workers from various backgrounds on construction sites.

8.6 Technological Innovations

New technologies like drones for site inspections, wearable sensors for real-time monitoring, wireless communication systems and Building Information Modeling (BIM) for risk assessment are becoming popular worldwide. Additionally, tools like augmented reality (AR) and virtual reality (VR) are widely used for safety

training and identifying hazards. Therefore, these tools can also be suggested for use on construction sites in Bangladesh as well.

8.7 Effective Safety Management System

Effective strategies to lower fall incidents include toolbox safety meetings, management commitment, and supervision. Previous research has demonstrated that effective supervision and management are crucial as standard precautions that can lessen the number of fall-related incidents and fall fatalities in Bangladesh. Those findings indicate that management teams not only have a vital responsibility to introduce safety policies but also need to ensure that each employee understands and complies with safe work practices. Attending toolbox safety briefings with all employees, managers and subcontractors helps increase awareness of the problem and stop falls from occurring. Safety regulations, fall hazards, and corrective and preventative measures can all be covered at toolbox safety sessions. This will guarantee that they care about their safety and have an improved understanding of safety issues. Workers can also provide valuable suggestions because they have hands-on experience working in construction sites.

9. HIRARC AND THE HIERARCHY OF CONTROL

HIRARC a process that allows employers to plan, implement and monitor preventative measures to tackle a hazard (Suhardi, Estianto & Laksono, 2016). Figure 3 illustrates possible flowchart of HIRARC process of fall hazard. The Hierarchy of Controls is another tool widely recognized framework used globally to manage workplace hazards effectively. The National Institute for Occupational Safety and Health, (NIOSH) and Occupational Safety and Health Administration (OSHA) both organizations use the following tool (Manuele, 2005). Figure 4 illustrates the hierarchy of the steps of risk control. Here, Elimination – Physically remove the hazard; Substitution – Replace the hazard; Engineering Control – Isolate people from the hazard, Administrative Control – Change the way people work, Personal Protective Equipment - Protect the worker with PPE (Staying Safe at Work: a guide to occupational safety & amp; Health, 2021). This structured approach ensures a systematic reduction of workplace risks, starting with strategies that address hazards at their source before relying on protective measures. Such a methodical application ensures the highest levels of safety and health in occupational settings (Staying Safe at Work: A Guide to Occupational Safety & Health, 2021).

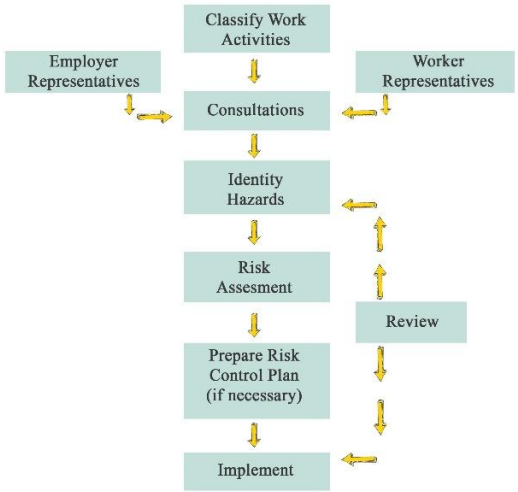

Figure 3: Flowchart of HIRARC process

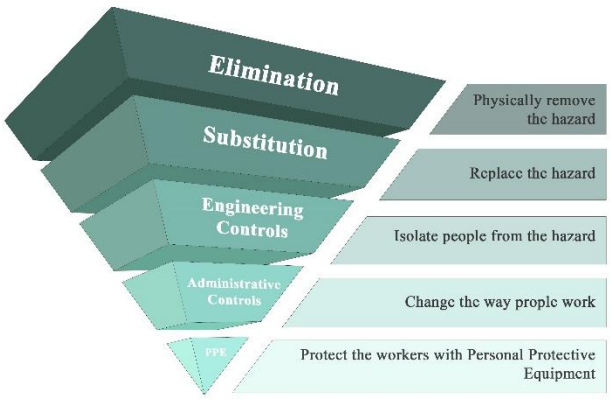

Figure 4: The hierarchy of Risk Control (Staying Safe at Work: a Guide to Occupational Safety & Amp; Health, 2021)

10. CONCLUSIONS

Among all types of accidents in construction sites, fall hazards can be considered as the riskiest one that occurs often in sites nowadays and causes severe injuries sometimes leads to death of workers. The study results incorporate that the most common factors that contribute to the fall hazards are workers negligence, failure of workers to obey work procedures, lack of sufficient safety equipment, operating machinery without safety devices, failure to use PPE, communication barrier, poor site management and workers carelessness about safety. At the same time, insufficient enforcement of safety regulations exacerbates the problem.

In order to reduce fall hazards, it is essential to make full use of the safety measures. The working environment can be made safer by the regular training and the enlightening programs, which are adjusted according to the worker's needs; thus, the safety culture can be reinforced, whereas the weekly inspections along with adherence

to the standardized checklists can also enhance the site conditions. Consequently, advanced technologies like wearable sensors and drones for real-time monitoring, wireless communication systems and augmented/virtual reality for training can also be part of safety practices. Additionally, there is a need for collaboration between government agencies, employers, trade unions, and civil society organizations to create a comprehensive methodology for mitigating fall hazards and promoting a safety culture in the workplace. These measures can prevent fall hazards largely and can save valuable lives of workers and employees related to construction sites in the future.

The scope of further study from this paper encompasses the comparative effectiveness of international best practices for the prevention of fall hazard, assessment of the economic and productivity impacts of fall-related accidents and detailed investigation of the potential technological innovations for hazard detection. These will promote a safer, sustainable construction industry in Bangladesh by introducing comprehensive strategies to prevent fall hazards, aligning with Sustainable Development Goals.

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APPENDIX A. FALL HAZARD IN CONSTRUCTION SITE QUESTIONNARIRES

GoF-1 Unsafe Working Conditions

GoF-1.1 To what extent do you agree that improper scaffolding or guardrails are a major cause of falls on construction sites?

GoF-1.2 Open edges such as floors, platforms, or scaffolding without adequate safety barriers significantly increase the risk of falls.

GoF-1.3 In Bangladesh falls from scaffolding are among the most common types of accidents on construction sites.

GoF-1.4 Poor housekeeping on construction sites contribute hugely to slip and fall hazards.

GoF-1.5 Working at high elevation in construction is riskier compared to other industries.

GoF-1.6 Better maintenance and housekeeping practices could reduce fall-related risks in construction significantly.

GoF-2 Unsafe Work Practices

GoF-2.1 Workers' failure to wear or improperly use personal fall arrest systems, safety harnesses, lanyards, or anchor points significantly increases the risk of falls.

GoF-2.2 Ignoring safety measures or rushing tasks frequently results in accidents and falls on construction sites.

GoF-2.3 Working for long time without sufficient rest contributes to judgment and coordination problems that increase the chance of falls.

GoF 3- Weather Conditions

GoF-3.1 Adverse weather conditions, such as rain, create slippery surfaces that significantly increase the chance of falls to the worker.

GoF-3.2 Sometimes sands from high winds reduced the visibility of the worker and increasing the likelihood of falls.

GoF-3.3 Do you think construction workers should take extra precautions, such as enhanced traction and protective clothing during works.

GoF-4 Overloading

GoF-4.1 Overloading scaffolding and elevated platforms is a significant safety concern at construction sites.

GoF-4.2 The collapse or failure of overburdened structures can result in serious injuries or fatalities on construction sites.

GoF-4.3 Workers should receive more training on the prevention of overloading construction structures.

GoF-5 Communication Barriers

GoF-5.1 Poor communication channels between safety authorities and employees increase the risk of falls on construction sites.

GoF-5.2 Language barriers of the worker such as inability to read or interpret printed safety signs, significantly increase the chance of fall hazards.

GoF-6 Management Issues

GoF-6.1 Management's failure to provide sufficient personal protective equipment (PPE) significantly increases the risk of falls on construction sites.

GoF-6.2 PPE is a crucial safety resource that must be consistently supplied to workers to reduce the likelihood of falls.

GoF- 6.3 Inadequate safety training by management increases the possibility of falls due to unsafe work practices.

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