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A Study on Health and Safety Management of Workers in Construction Industries Across Hyderabad, India

Syed Minhaj Uddin Ahmed[1], Mohammed Furkhan[2]
[1]*M.E Student,* [2]*Assistant professor, Department of civil Engineering, LIET, Hyderabad, Telengana, India*

Abstract: ***The construction industry is the 2nd largest employer industry after agriculture, employing 33M (million) people. The report from construction India development concil (CIDC) of 2005-2006 in India. Large percentages of work force are untrained, unskilled, illiterate, and migrante. Most of them drawn from rural background. There is no method establishment pragmatic method of screening work force prior to deployment of construction sites. Occupational fatalities; injuries and disease constitute defects as they are not project requirements. Injuries also contribute to the cost of construction and development as workers insurance compensation is include as a labour overhead and cost of accidents is integrated into cost structure of contractors Total Quality Management (TQM) is the strategy that links the processes of occupational safety and health, quality and productivity, health and safety providing the catalyst for realizing the synergy between the three processes. This paper is providing of TQM totally deals with top level in an organization and deals with the supervisors on site which provide. This paper in detail about the factors that affect safety in construction sites, beside this the research also studies the reason behind the accidents in construction sites and finally explores how safety management procedures could be implemented at their best in the construction industry.***

Indexterms: ***India development council (CIDC), Total Quality Management (TQM), cost, accidents, safety, productivity.***

I. INTRODUCTION

Occupational fatalities, injuries, and illnesses result in significant human suffering and affect not only the workers directly involved but also their communities and families, contributing to national medical and rehabilitation costs.A clear focus on safety-enhancing attitudes and behaviors will help improve overall site safety and reduce accidents. Despite increased safety awareness, construction remains a high-risk industry with approx. 5 percent of workers in Britain, it accounts for 27 percent of worker fatalities and 10 percent of reported serious injuries. Behavioral change is essential to prevent accidents and helps companies improve safety standards on-site through their employees. However, occupational diseases, injuries, and mortality also contribute to resource variability, which increases project risk. This risk manifests itself in increased construction costs, environmental damage, schedule overruns, and failure to meet quality standards. Another aspect is the image of the supplier and the client, which is negatively affected by accidents. As every member of the client, construction and design teams affects and contributes to occupational health and safety, project managers, as project leaders and coordinators, are uniquely positioned to integrate health and safety into all aspects of the construction process and projecting. Safety in the workplace and in the workplace has become the main points of many organizations, which result in their consequences, which result from even a dangerous environment, productivity and health of the workforce. In particular, the construction industry suffers the largest share of workplace accidents, including injuries and deaths (Kim and Chi, 2019). The extent and intensity of accidents that occur on construction sites is at an alarming level. This is due to the risks and dangers associated with the type of work and the types of situations that workers have to deal with during production activities. The field of occupational accidents affects not only employees, but has serious negative effects on the overall economic and social health of organizations Frequent accidents cause a decrease in the efficiency of the workforce and increase absenteeism at work Such accidents also demotivate employees (Beqiri, 2020) and waning enthusiasm is reflected in sloppy and disorganized execution of tasks (De Prins et al., 2020). Due to inadequate reporting and misrepresentation of occupational injuries and illnesses, including fatalities, accurate documentation of incidents is quite difficult. However, the International Labor Organization (ILO) reports approximately 2.78 million people worldwide who have lost their lives as a result of occupational accidents. and diseases' Worldwide there are about 374 million non-fatal work-related injuries resulting in 4-day absence from work Of all the industries in the world, construction appears to be disproportionately much higher in the incidence of work-related injuries (International Labor Organization 2020).

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According to a report on occupational accidents and work-related illnesses by Ministry of Social Affairs and Health of Finland nearly an 8% increase was noted for fatal occupational accidents over the span of 4 years in 2014 with roughly 380,500 fatalities Asia had the highest number of fatalities among the five regions including Africa America Europe and Oceania that encompassed about 70% globally (Ministry of Social Affairs and Health Finland 2017). The proportion of fatality incidences is high in the construction sector than any other sector in countries like Sweden Australia and Untied Kingdom that establishes the concern over safety in the construction industry even strongly (Farooqui et al., 2008). Approx. 80% of all accidents on construction sites are caused by unsafe human behaviors, with the majority of fatalities being due to workers falling from heights, striking against or being struck by moving objects, or being struck specifically by moving vehicles (Hong Kong Special Administrative Region, Labour Department, 2012). Construction is different from other industries because of several unique characteristics, including complicated construction processes, temporary organizational structure, changing work locations (Building, 1987), complex work environments (Fang and Wu, 2013), and the characteristics of worker behaviors, which are not as standardized as those in manufacturing factories (Geller, 2001a,b). In India around 48,000 workers die due to occupational accidents of which 28.2 percent is attributed to the construction sector (The Times of India 2019).

The construction industry is an important identifier for economic development for India as it opens new investment opportunities across related sectors Gross Domestic Product (GDP) from construction in India has increased to INR 2,754.48 billion to INR 2,535.88 billion in the fourth quarter of 2018 (India GDP from construction 2018). The success of the construction firm depends on the successful completion of the projects.

II. OBJECTIVES OF WORK

1) To identify the broad factor that influence safety compliance in Indian construction.
2) To reduce risk of injuries to public and accidents.
3) To select best option to reduce the accidents.
4) To provide correct procedure and feasible one.

III. SCOPE OF WORK

1) To attain up to zero accidents on construction site
2) The research will help to get maximum safety by fewer efforts
3) By instructing the workers about construction safety importance towards their lives
4) Combination of TQM and BBS can make a big difference

IV. METHODOLOGY

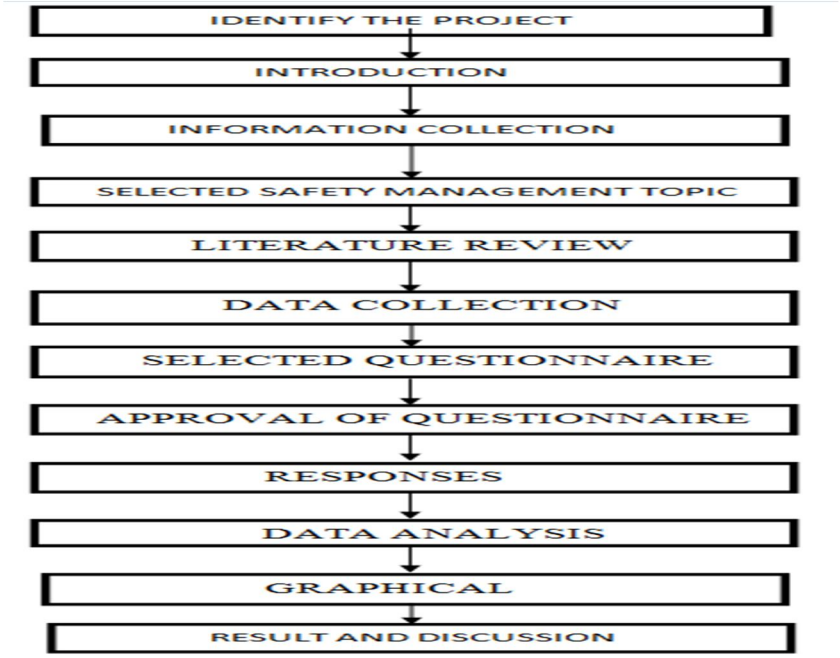


Fig-1: methodology of work

V. DATA COLLECTION

The data is gathered from engineers, contractors, and workers from different construction companies across Hyderabad. In this work, data is gathered from answers collected from respondents' views on safety factors affecting the construction company. With the help of questionnaires, the data is collected in this work.

VI. RESPONSES

Responses from various organizations and individuals is done through goggle form
Data analysis is done and graphical representation of data to clear understanding of conclusions

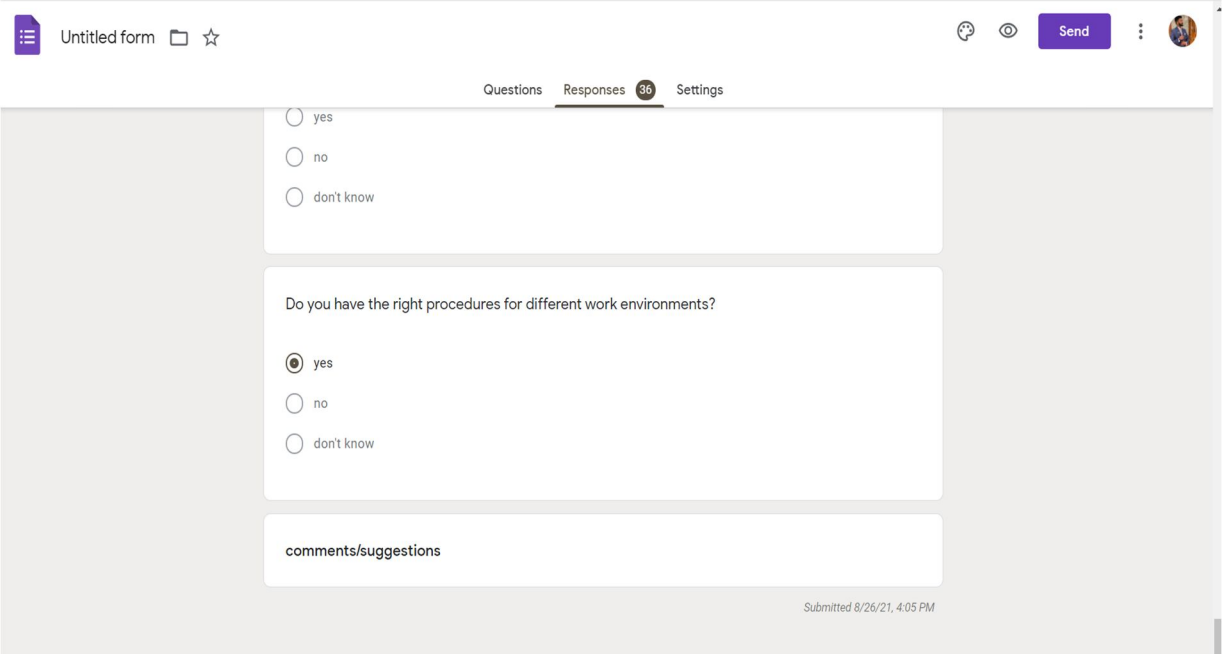


Fig-2: google form

VII. RESEARCH

36 Responses of members who are indulge in construction site through google form survey

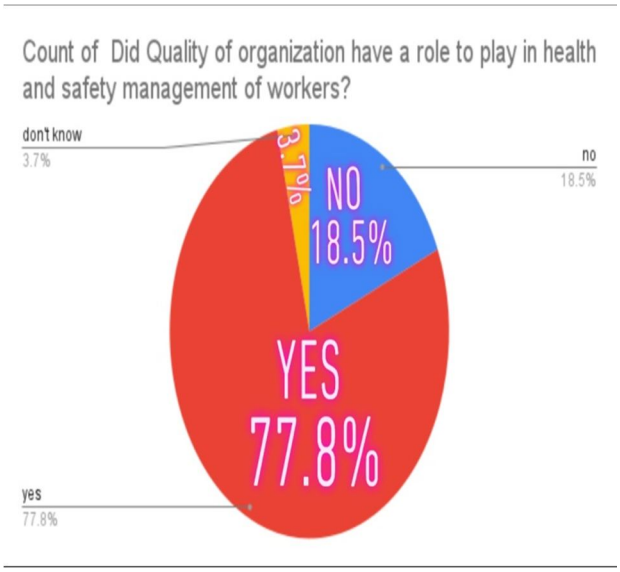


Fig- 3

the above figure shows that majority of says quality of organization have role to play in health and safety management of worker.

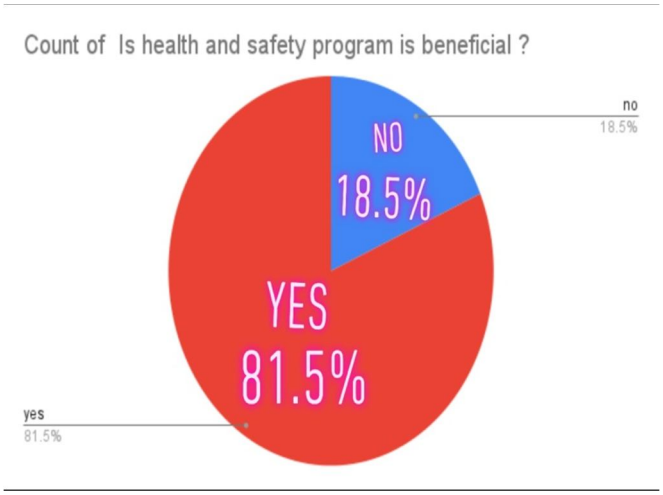


Fig- 4

the above figure shows that majority of says health and safety program is beneficial

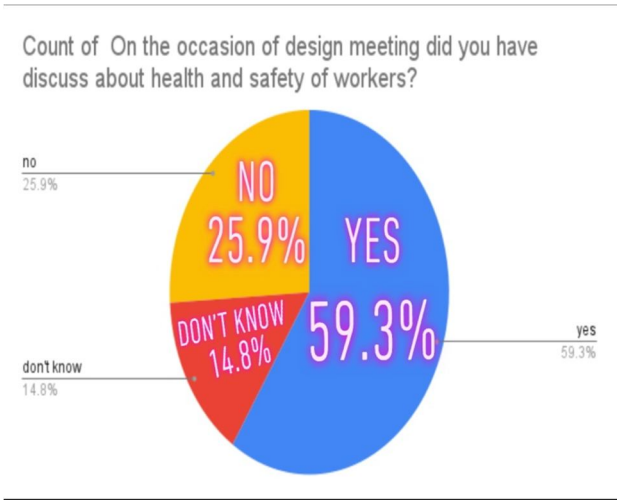


Fig- 5

Shows that more than half says that during design meeting health and safety is discussed

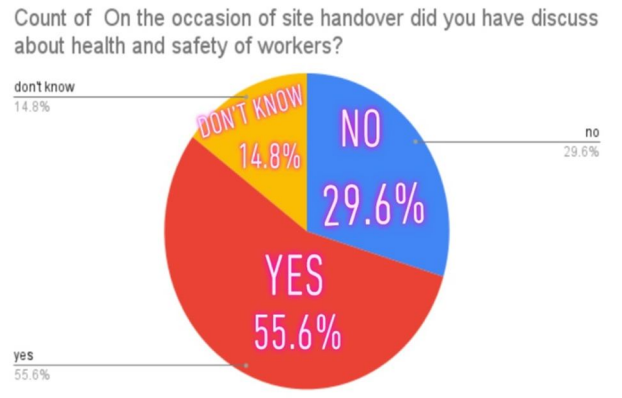


Fig- 6

the above figure shows more than half says during site handover health and safety considered

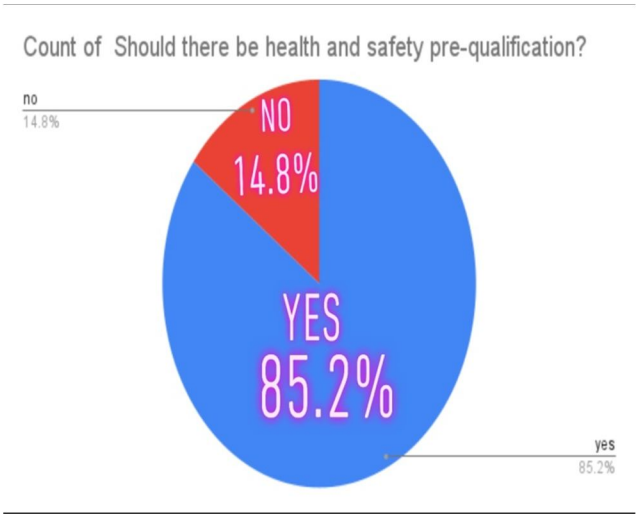


Fig-7

majority says there is health and safety pre-qualification

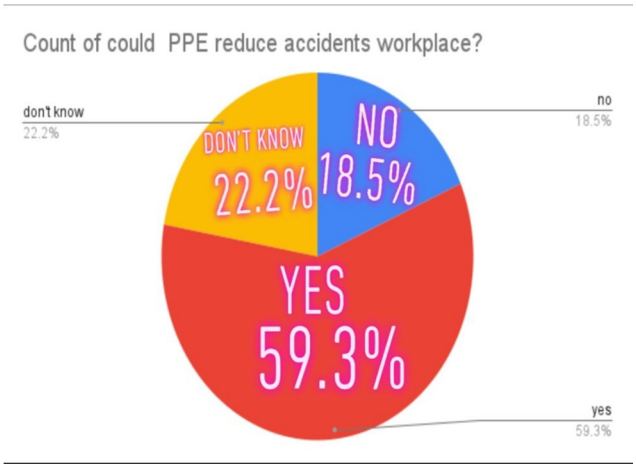


Fig- 8

the above figure shows more than half says PPE can reduce worklace safety

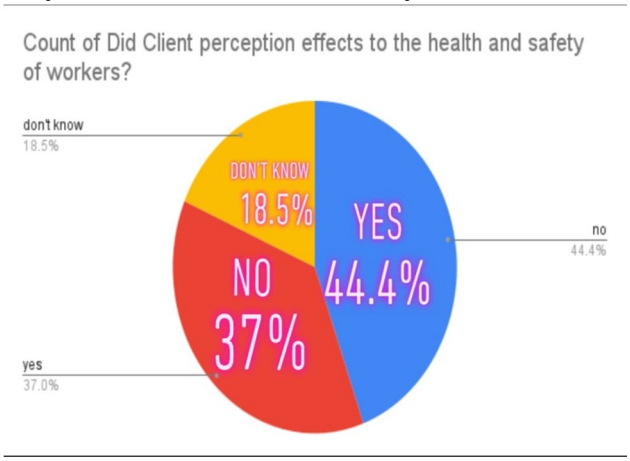


Fig-9

shows that more than 40% says client percetion effects to health and safety of worker

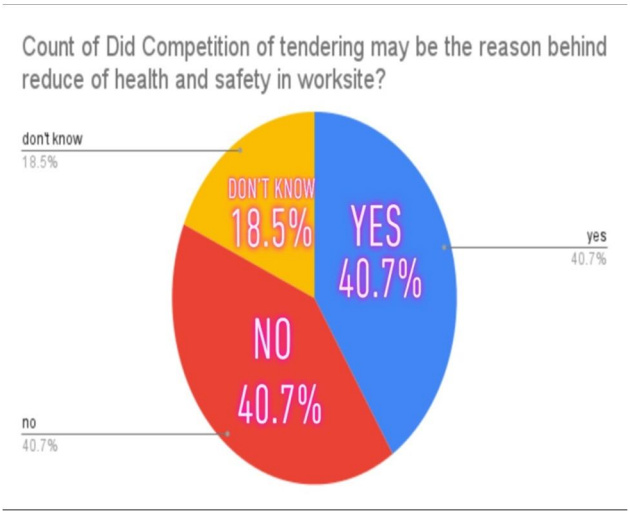


Fig-10

shows that draw between competition of tendering may be the reason behind reduring health and safety at worksite

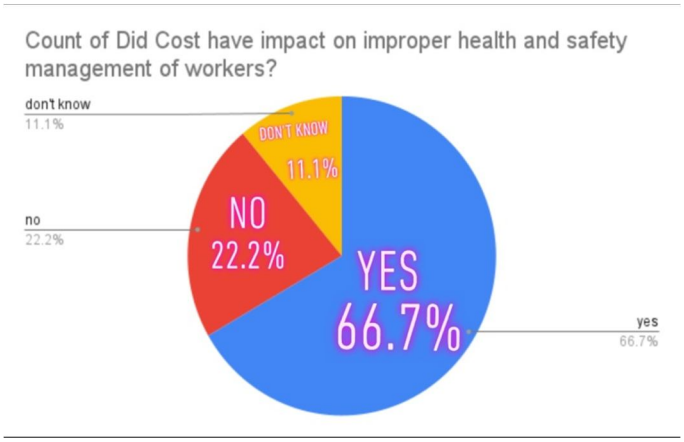


Fig-11

shows that more than half says cost have impact on improper health and safety

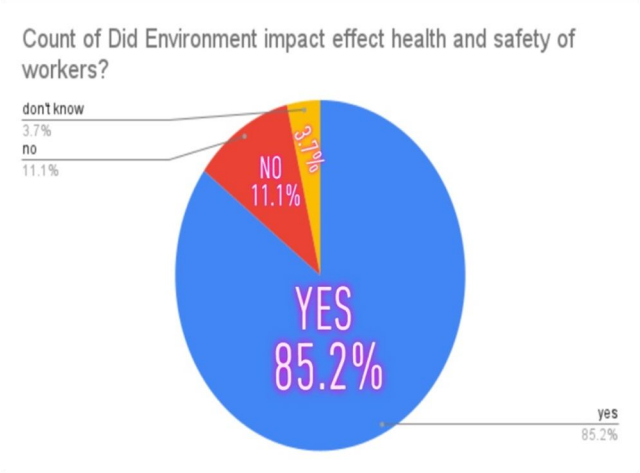


Fig-12

shows that majority says environment impact on health and safety of worker

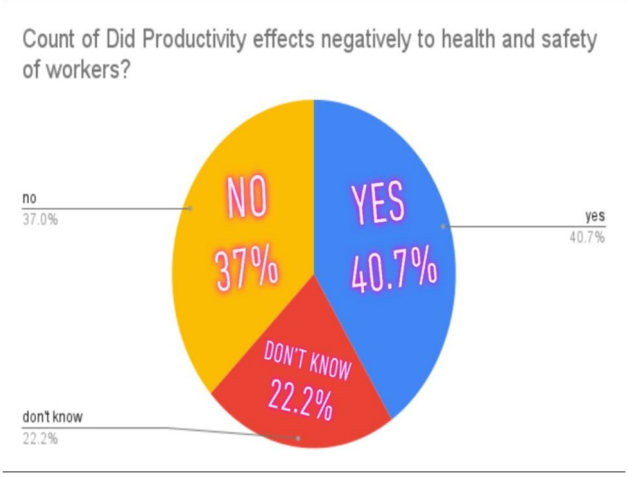


Fig-13

shows that more than 40% says productivity effects negatively to health and safety

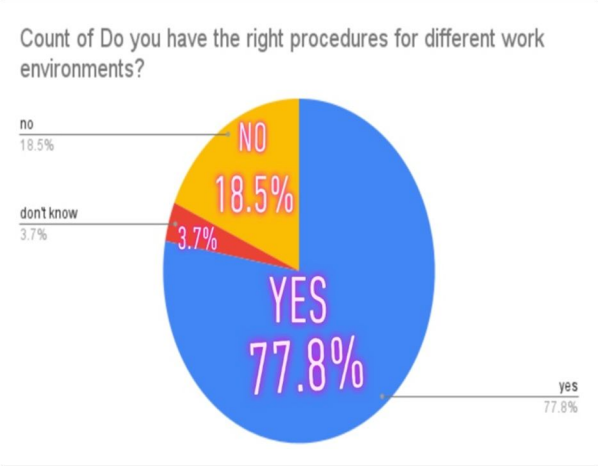


Fig-14

shows majority says they have right procedures for different work environments

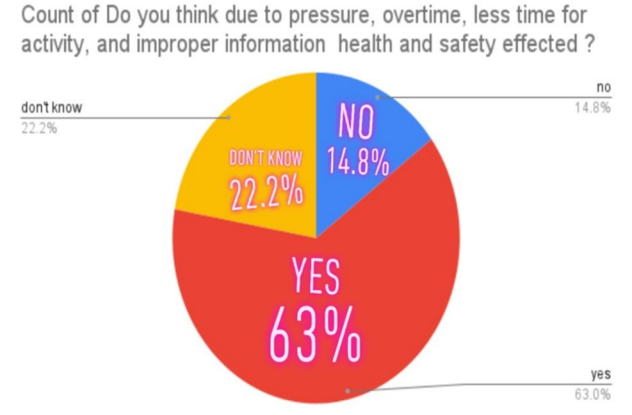


Fig-15

shows that majority says due to pressure, overtime, lessstime for activity and improper information effect health and safety of worker

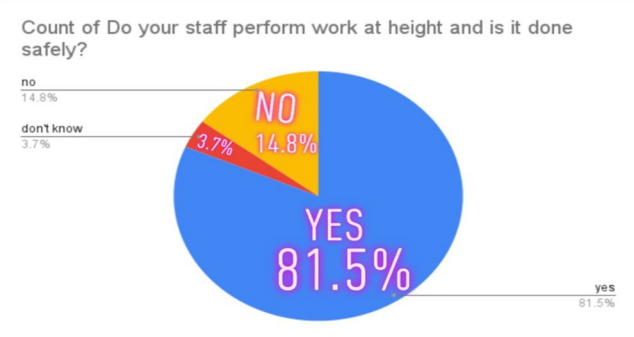


Fig-16

shows that majority says their staff perform work at heights is done safely

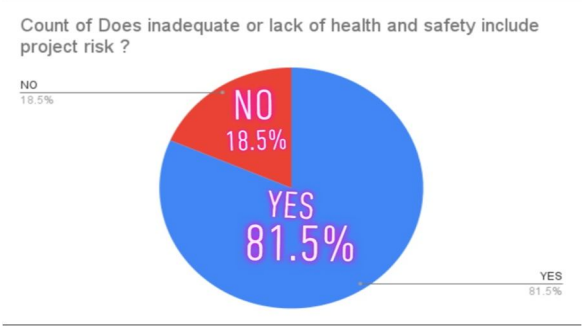


Fig- 17

shows that majority says inadequate or lack of health and safety include project risk

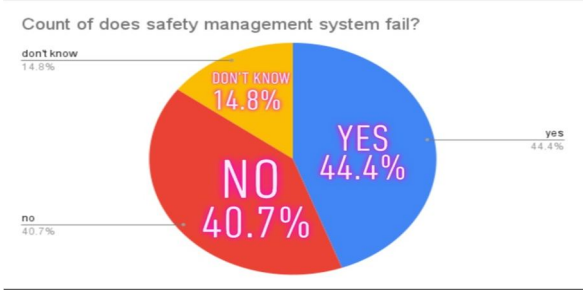


Fig-18

shows that mostly draw on safety management fail between yes and no

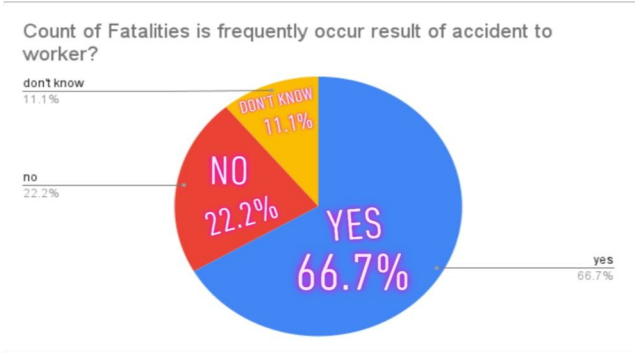


Fig- 19

shows that majority says fatalities is frequently occure result of accident of worker

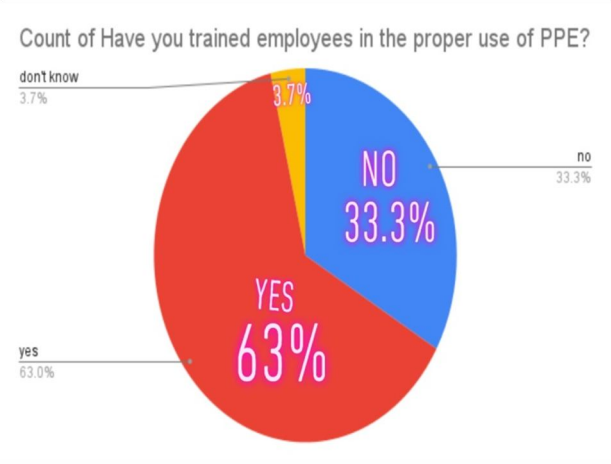


Fig- 20

shows that majority says they have trained employees in the proper use of PPE

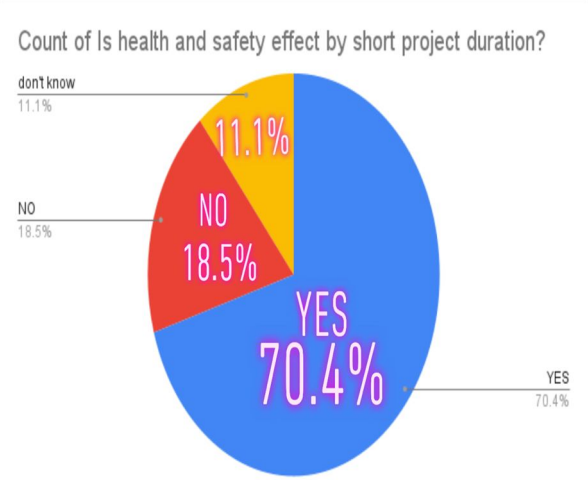


Fig-21

shows that majority says Health and safety effect short project duration

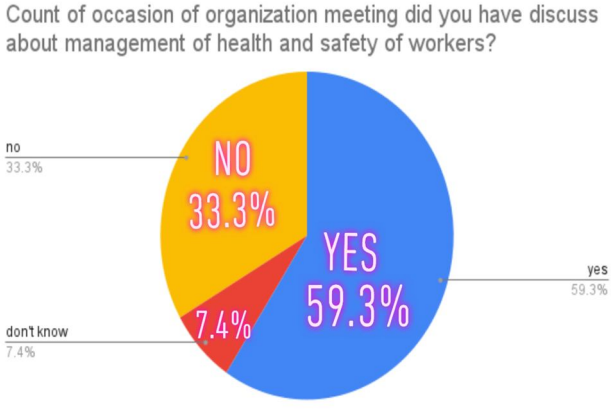


Fig- 22

shows that majority says during organization meeting safety of worker is consider

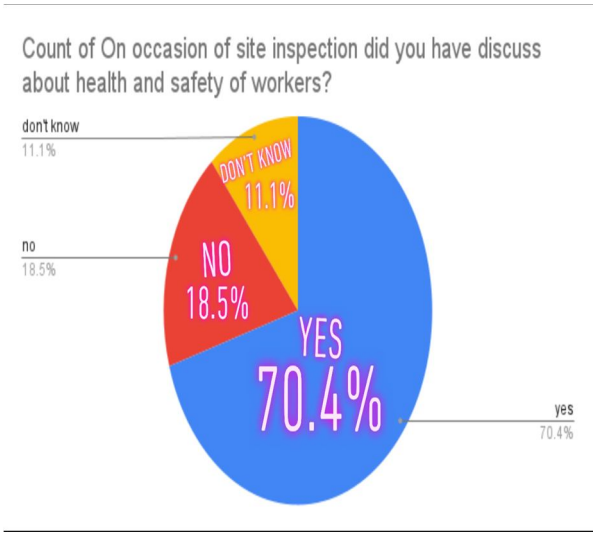


Fig-23

shows that majority says during site inspection health and safety of worker considered

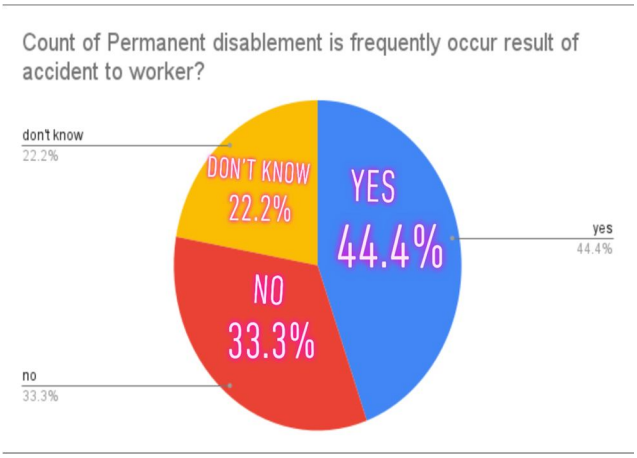


Fig- 24

shows that permanent disablement is occure as result of accident

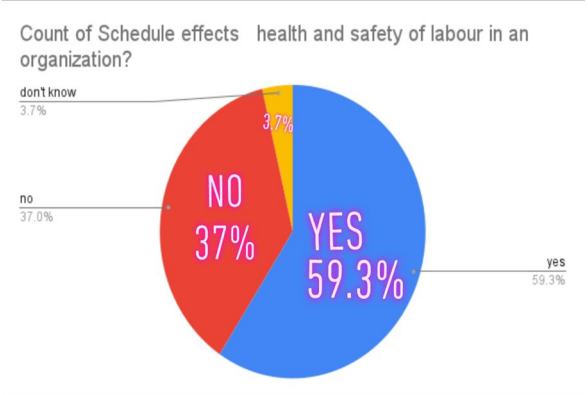


Fig-25

shows that majority says schedule effect health and safety of

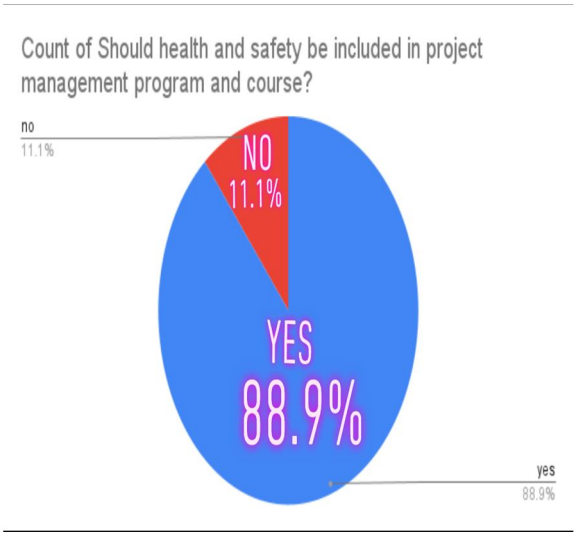


Fig-26

shows that majority says health and safety should be include in project msnsgement program and course worker

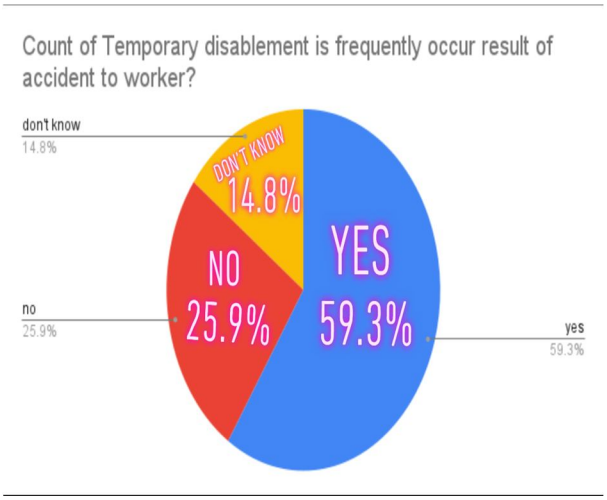


Fig- 27

shows that majority says temporary disablement is frequently occur result of accident toworker

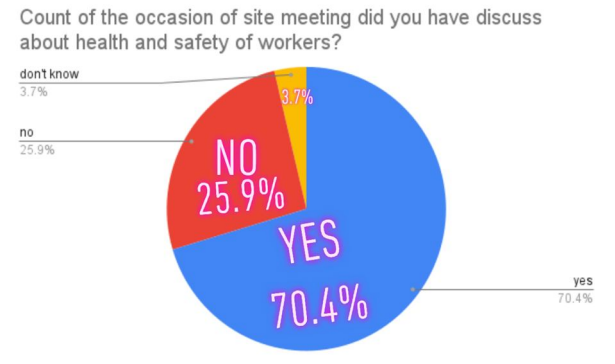


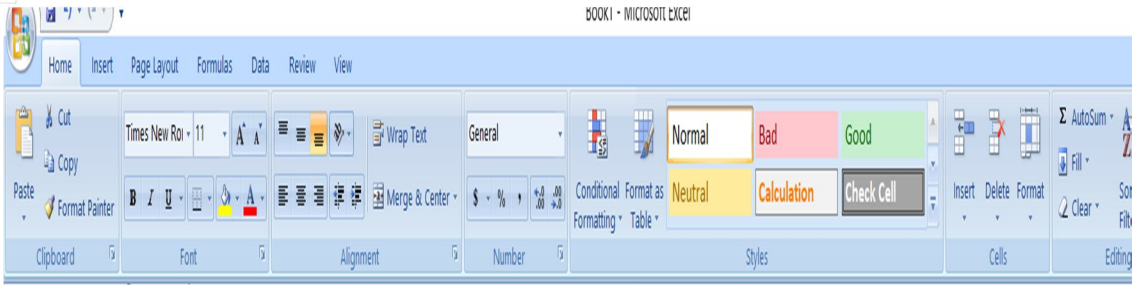
Fig- 28

shows that majority says during site meeeting health and safety of worker considerd

Table 1:- comparison

S.NO.	QUESTIONS	YES%	NO %	DON'T KNOW%	TOTAL %	GRADING
1	Is health and safety effect by short project duration?	70.4	18.5	11.1	100	4
2	Does inadequate or lack of health and safety include project risk ?	81.5	18.5	0	100	3
3	Did Cost have impact on improper health and safety management of workers?	66.7	22.2	11.1	100	6
4	Did Quality of organization have a role to play in health and safety management of workers?	77.8	18.5	3.7	100	4
5	Did Productivity effects negatively to health and safety of workers?	40.7	37	22.2	100	10
6	Did Environment impact effect health and safety of workers?	85.2	11.1	3.7	100	2
7	Schedule effects health and safety of labour in an organization?	59.3	37	3.7	100	8
8	Did Client perception effects to the health and safety of workers?	44.4	37	18.5	100	9
9	Did Competition of tendering may be the reason behind reduce of health and safety in worksite?	40.7	40.7	18.5	100	10
10	Do you think due to pressure, overtime, less time for activity, and improper information health and safety effected ?	63	14.8	22.2	100	7
11	Should there be health and safety pre-qualification?	85.2	14.8	0	100	2
12	Should health and safety be included in project management program and course?	88.9	11.1	0	100	1
13	ON THE occasion of organization meeting did you have discuss about management of health and safety of workers?	59.3	33.3	7.4	100	7
14	On the occasion of design meeting did you have discuss about health and safety of workers?	59.3	25.9	14.8	100	7
15	On the occasion of site handover did you have discuss about health and safety of workers?	55.6	29.6	14.8	100	2
16	On occasion of site inspection did you have discuss about health and safety of workers?	70.4	18.5	11.1	100	5
17	the occasion of site meeting did you have discuss about health and safety of workers?	70.4	25.9	3.7	100	5
18	Temporary disablement is frequently occur result of accident to worker?	59.3	25.9	14.8	100	8
19	Permanent disablement is frequently occur result of accident to worker?	44.4	33.3	22.2	100	9
20	Fatalities is frequently occur result of accident to worker?	66.7	22.2	11.1	100	5
21	Is health and safety program is beneficial ?	81.5	18.5	0	100	3
22	could PPE reduce accidents workplace?	59.3	18.5	22.2	100	
23	Have you trained employees in the proper use of PPE?	63	33.3	3.7	100	6
24	does safety management system fail?	44.4	40.7	14.8	100	9
25	Do your staff perform work at height and is it done safely?	81.5	14.8	3.7	100	3
26	Do you have the right procedures for different work environments?	77.8	18.5	3.7	100	4

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25	Do your staff perform work at height and is it done safely?	81.5	14.8	3.7	100	3
26	Do you have the right procedures for different work environments?	77.8	18.5	3.7	100	4

Fig- 29 Grading of factors

VIII. CONCLUSION

Based on the research findings from following conclusion found:-

1) The fatalities and injuries in Hyderabad in construction is uncontrollable and to reduce it. The efforts are needed from all the project shakeholders
2) Proper training of employees can reduce the injuries
3) Use of ppe can minimize the accidents
4) Health and safety of worker plays important role in successfulness of project
5) Awareness program can minimized up to 20% of project risk

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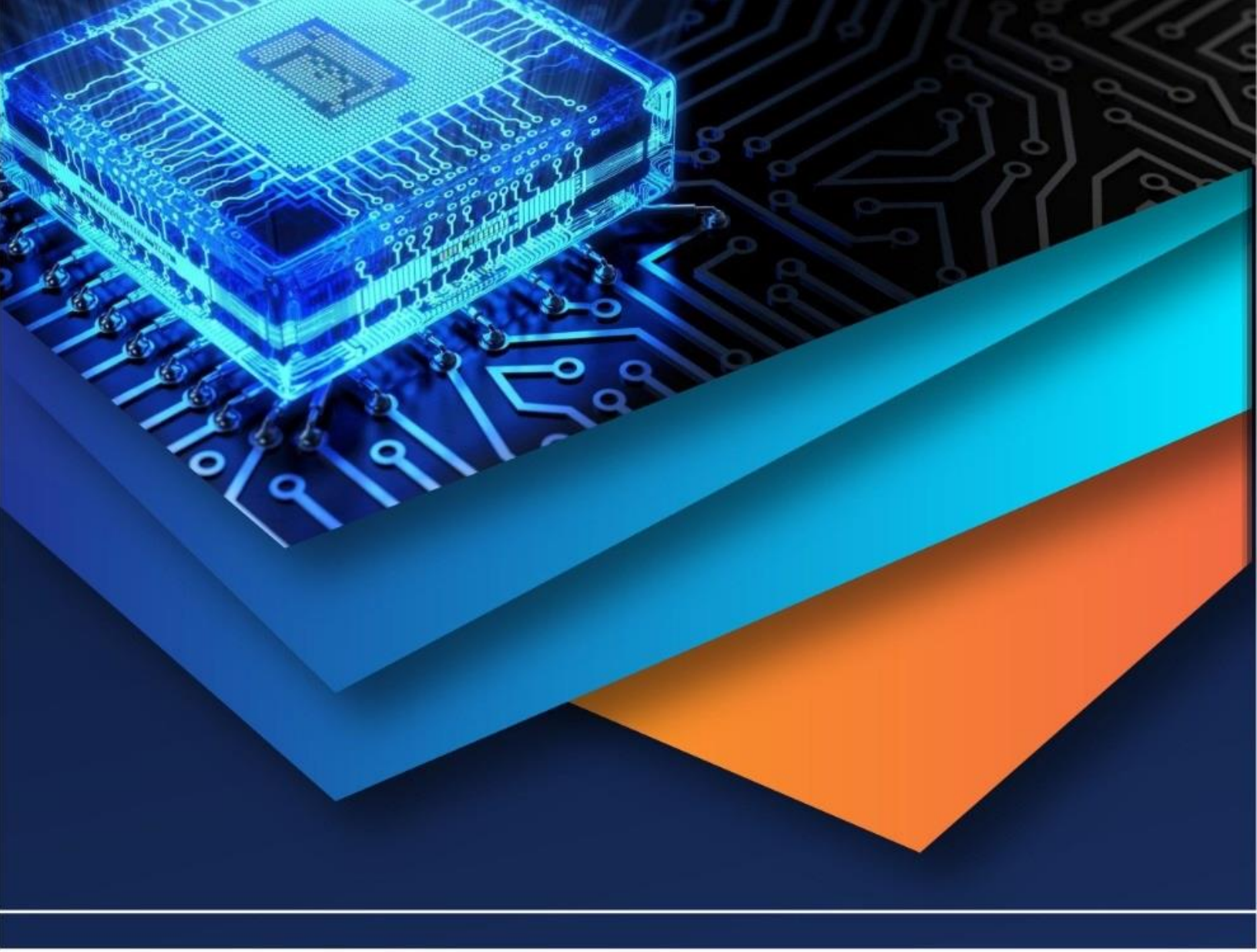
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