



A STATUS ON OCCUPATIONAL HEALTH HAZARDS OF CONSTRUCTION WORKERS IN TRICHY

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ABSTRACT

The construction industry in India is the second largest employer of unorganised workers next to agriculture. The workers of the construction sector work in unhealthy and polluted atmosphere under direct sunlight for long hours are non congenial. The occupational health hazard in the construction industry is the highest. The hazards in the construction work sites are categorised as Physical, Chemical, Biological and Nano hazards. An attempt is made to find out the hazardous factors that affect the health of the construction workers at work place and its incidence on the health of the construction workers.



KEY WORDS : Occupational Health, Construction workers, Health Hazards.

INTRODUCTION

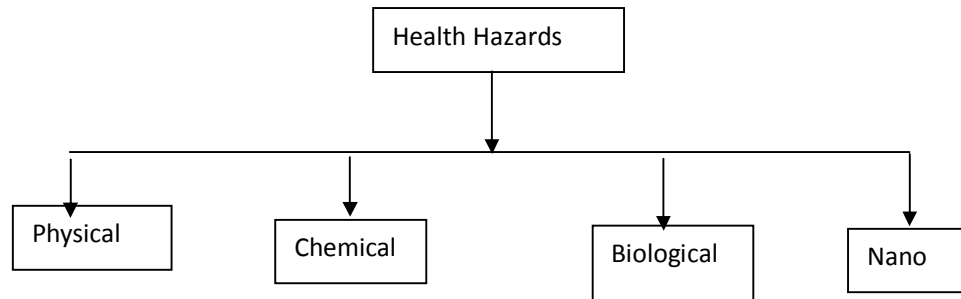
According to ILO the growth of GDP of India had increased from 5.6% in 2012-2013 to 7.6% in 2015-2016 is due to the improved labour market conditions. The survey done by Times of India on Feb 5, 2016 revealed that construction sector is the second largest employer of unorganised workers in India. The Indian construction industry is highly labour intensive, playing a vital role in the overall economic development of the country growing at a compound annual rate 20% over the past 5 years contributing 8% to GDP. The construction sector employs more than 35million people in India. Human capital is the most important asset to the construction company. Construction is one of the most dangerous occupations in the world than any other sector in developed and developing countries.

The performance of the worker is accounted by the output and productivity of the labour. The maximum stipulated hours of work for a labour in India according to the Factories act 1948 is 8hours/day. But construction workers work for 8 to 10 hours per day. The labour force engaged in construction work belongs to the unorganised sector and their employment is casual and unsecured. The employers are not inspected by the state authorities regarding the working hours and work atmosphere of the labours employed.

They work for long hours under direct sunlight in polluted work conditions. They are subjected to handle hazardous materials at the work spot. The work atmosphere at construction sites are characterised with toxic and volatile chemicals, presence of excessive noise levels complication of vibrations due to repetitive use of equipment and tools, forceful and awkward working postures and lack of basic amenities.

They work in the presence of the excessive noise levels with their equipment which cause illness. They also have to cope up with frequently changing worksites.

Construction workers suffer from more injuries and fatalities than the general work force population. Hence, they become victims of many occupational hazards. The health hazards associated with the construction industry is categorised as



PHYSICAL HAZARDS

Falls are one of the most common injuries among construction workers. Improper handling of equipment such as harnesses and guardrails and using insecure ladders are the main causes for falls and injuries at the work site. Improper electrification leads to electrocution. Transportation accidents take place in the process of removing wastage and demolished materials. Occurrence of accidents in the construction sites are usually due to lack of communication among the workers, lack of proper inspections of scaffolding network, improper maintenance of equipments, following of unsafe practices and lack of experience of technical supervisors under whom small contract labours are tend to work.

It is obvious that falls, accounts for the highest causes of fatalities. Next to falls injuries and cutting of fingers were registered during loading and unloading of bricks of cement bowls. During transportation of bricks and cement from lower to higher heights shoulder dislocation and wrist problems are registered.

Only at the later stages, when the worker belong to the age of 50 to 60 joint problems are noticed due to the improper handling of tools like hammer and showels. The falling of objects for instance bricks on the organs of the construction worker during loading and unloading is due to employing unskilled labours.

CHEMICAL HAZARDS

The major diseases prevailing among the construction workers are due to handling and working among hazardous chemicals like silica dust, lead dust, asbestos dust vapours and fumes gases found in confined spaces present in work place. These factor cause diseases of joints and bones. Lungs disorders occur due to inhaling of poisonous chemicals like carbon monoxide and benzene present in paints, thinners in varnishes. Respiratory infections and skin diseases are due to the dust present in the polluted atmosphere and working conditions in the building sector.

BIOLOGICAL HAZARDS

Due to the unsafe and polluted atmosphere of working conditions the construction workers undergo lot of physical ailments. Lack of proper maintenance of lifting appliances, practicing out model methods of demolition, temporary and unsafe electricity connections leads to fire accidents due to short circuits.

NANO HAZARDS

Materials which are not very harmful could become toxic if they are inhaled in the form of nano particles. The effects of inhaled nano particles in the body may include lung inflammation and heart problems.

STATEMENT OF THE PROBLEM

Construction industry is one of the fastest growing sectors and the contribution of this sector towards the infrastructural development, economic growth and provision of employment opportunities is commendable. But higher rate of work-related accidents, injuries and deaths have made this occupation one of the hazardous industries in the world. (Caminoetal, 2018, Cheng etal, 2010). The reports of Health and safety measures of various countries show that the rate of fatalities are increasingly high, due to which the loss of working hours was estimated to be 2.3 million hours for the year 2013-14 (Ellis 2014). Growth of construction industry in India is correlated with high fatalities. Express India April 28, 2018 had cited that accidental deaths in construction industries are rising. It was found that Average Fatal Accident Frequency Rate (AFAFR) in India among the construction workers was 15.8 incidents per 2391 construction workers. Even though legislations were framed for the welfare of the workers, they are not inspected properly. Safety must be the first priority of every concern but reduction of occupation illness is through various precautionary actions are inevitable.

REVIEW OF LITERATURE

Based on their research "Paivi-Leino-Arjas et al (1999) inferred that the main cause for the prevalence of unemployment among construction workers is due to skin disorders, Gastro intestinal disorder, mental disorders and stress symptoms. Huand and Hinze (2002) empirically stated the accident caused due to fall of worker at construction sites occur mostly at new construction projects with low cost. The data base of Construction Workers Federation of India 2007 lamented that 73% of the total construction workers were belong to the unskilled category. They were exploited by the contractors from availing legal protections due to their illiterate behaviour. According to kartik. R. Shah et al., (2010). 58.9% of male were subjected to skin problems due to exposure of direct body / skin towards concrete, cement and chemicals. But only 22.2% of female had symptoms of dermatitis due to their way of dressing which covers body parts and skin from chemicals. Balakrishna et al., (2011) extrapolated the pattern of health problems among construction workers such as respiratory infection, skeletal disorders, injury and skin problems. They also found out that the risk taking behaviour of the workers and the physical, mental state of workers play a significant role in the occurrence of accidents.

SCOPE OF THE STUDY

The scope of the survey is to review the incidents and impact of hazardous materials and work atmosphere on the health of construction workers. Even though the construction industry is hazardous, the occurrence of injuries, accidents, and health problems can be minimized through constant monitoring methods, improved communication facilities at worksites and through deploying skilled and trained supervisors.

Objectives

- To enlist the major impact of hazards on health of the construction workers.
- To identify and predict the occurrence of injuries in the occupational atmosphere.

Hypothesis

- There is no significant association between gender of the respondents and their physical hazards
- There is no significant association between age and health problems of construction workers.

Research methodology

Based on the objectives the survey was made to collect information from the affectants through personal interview.

Data collection

The study is empirical data is collected from the construction workers at the work spot who had experienced injuries and health problems recently within 3 months (April, May, June of 2018). Secondary data is collected through articles, newspaper, journals and reports of ILO.

Sampling size of the study

The sample size determined for the study is 100 (50- male; 50- female). The samples were selected on the basis of non-probability convenient sampling. The respondents were selected at the construction sites in Trichy.

RESULT AND DISCUSSION

Table No. - 1: Association between gender of the respondents and their physical hazards

S.No	Physical hazards	Male	Female
1	Falls / Slips Scaffolding works	10	-
2	Noise due to concrete work, centring	7	8
3	Blasting of explosives	15	13
4	Falling of object	10	16
5	Loading and unloading	5	8
6	Ionising radiation	3	5
	Total	50	50

There is no significant association between gender of the respondents and their physical hazards. The calculated value is greater than table value ($\chi^2=12.622$; Df=8; $0.213>0.05$.) The null hypothesis is accepted.

Table No. - 2: Association between age of the respondents and their occurrence of health problems

S.No	Age	Yes	No
1	18 to 28yrs	18	2
2	28 to 38yrs	17	2
3	38 to 48yrs	13	1
4	48 to 58yrs	14	2
5	58yrs & above	28	3
	Total	90	10

There is significant association between age of the respondents and their occurrence of health problems. The calculated value is less than table value ($\chi^2=6.731$; Df=8; $0.08<0.05$.) The null hypothesis is rejected.

CONCLUSION

Most of the workers at construction sites were victims of many hazards, but through strict legal measures and continuous monitoring of worksites through state officials provide positive results on the productivity and health status of construction workers.

REFERENCES

1. www.ilo.org news
2. www.indianminor.com and Indian industries and 2016 construction 2016 html. Indian construction industry at a glance in 2015-2016

3. Health and safety at work statistics euro state European commission retrieved 3 august 2016.
4. "Osha's fall prevention compaign" occupational safety and health administration retrieved August 6th, 2012.
5. Huang, Xinyu, and Jimmie Hinze ((2003)). "Analysis of construction worker fall accident." *Journal of Construction Engineering and Management*, Vol.129, Issue.3, Pp.262-271.
6. Kartik R., and Rajnarayan R. Tiwari (2010). "Occupational skin problems in construction workers." *Indian journal of dermatology*, Vol.55, Issue.4, Pp.348-354.
7. Adsul, Balkrishna B., et al (2011). "Health problems among migrant construction workers: A unique public-private partnership project." *Indian journal of occupational and environmental medicine*, Vol.15, Issue.1, Pp.23-29.
8. Leino-Arjas, Päivi, et al (1999). "Predictors and consequences of unemployment among construction workers: prospective cohort study." *BMJ*, Issn.319.7210, Vol.3, Issue.1, Pp.600-605.