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Udaya Kumar CR
Research Scholar, Department
of Social Work, Davangere
University, Tholahunase,
Karnataka, India

Dr. Lokesh MU
Professor, Department of
Social Work, Davangere
University, Davangere,
Karnataka, India

Health vulnerability among construction workers during the COVID-19 in Karnataka: A case study

Udaya Kumar CR and Lokesh MU

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Abstract

The coronavirus had a major influence on socio-economic, health of the all types of construction workers. Descriptive research study employed in the four districts of Karnataka. Karnataka government divided four regions for the Administration purpose. Therefore regions such as Bengaluru Regions, Kalburgi Regions, Mysore Regions and Mangalore Regions are follows.

Methods: Multi- Stage of cluster sampling method was used for the present study; and further simple random sampling method was used to selecting the construction workers. Over 200 construction workers have been select for the study. In each district over 50 construction workers has chosen for the study. The data collected through face-to- face interview using a structured questionnaire. Inferential statics likes Chi-Square test and Anova test used to check the relationship between health condition health status, Health problems among the construction workers. Hypothesis been framed to understand the three is significance relationship between group of the workers.

Conclusion: The government must takes propriety to give good health facilities, infrastructure to the worker and uplifts the welfare facilitates of workers. Because of maximum health infrastructure required by the workers.

Keywords: Health status, vulnerability, morbidity

Introduction

The coronavirus pandemic has made major changes to the health and livelihoods oppruntunities of construction workers in the informal sector. Health facilities and infrastctures are of big issues in the construction industry. The COVID-19 outbreak create an extra menace and problems that could have severely affected the health problems of construction workers everywhere. The construction workers in every field are at a greater danger of developing certain health, mental disorders and problems than workers another fields. construction workers are severely are affected to various physical, chemical and biological causes, which make them weak to various health problems that includes wounds, injuries, respiratory problems, heart, musculo-skeletal disorders and gastro-intestinal diseases Jayakrishnan *et al.*, (2013) ^[6]. The construction industry has become a represent status for being a mainly unhealthy industry because its day by day increase rate of work-related illness is consider one of the highest of all work-related forces. Workers health vulnerability are considered important public health concerns in the context of world scenario (Rupakheti *et al.*, n.d.) ^[12]. The many critical factors that being influence the health of construction workers is commonly reduce good behaviours in working places. (Rupakheti *et al.*, n.d.) ^[12]. The government must implement risk-reducing labour policies provides economic, social, and health supports to the construction workers and alleviate their deficiencies step by step Diti Goswami a, *, (2024) ^[4]. The constructions workers are eventually develop occupational disorders due to prolonged exposure to hazardous materials like dust, cement, and hazardous chemicals which used in the work places. Health issues among the construction workers are common due to of the numbers of dangers works taken places, and the keep migrating on places to another places. A health condition includes respiratory issues, skin diseases, and musculoskeletal disorders commonly observed in the construction Industry. Most of the hard workers by nature, especially helpers masons and assistant masons, do not use protective equipment's, further, increasing their health risks in the working places. POORNAMATHI N C, (2024) ^[11].

Corresponding Author:
Udaya Kumar CR
Research Scholar, Department
of Social Work, Davangere
University, Tholahunase,
Karnataka, India

The construction works go on across the nation, work related musculoskeletal disorders are crucial cause of functional injuries impairments and disability among workers but also substantial quantity of atom related dust which creates health illness to the workers as well as surrounding workers by way of troubling respiratory, heart, skin and eye diseases (Deshmukh & Ghooli, 2015) [3]. The workers are significantly need health care in construction industry because they have been experienced many health related namely smoking, alcohol and other drug abuse; sexually transmitted infections (STIs); chronic degenerative diseases, and other problems related to poverty, inadequate water sanitation, housing, and nutrition (Deacon, 2020) [2]. The majority of construction workers experienced challenges, leading to changes in their health status patterns, income levels, health problems and employment patterns in their working life Anjana N C, (2023) [1].

Review of literature

Dutta *et al.*, (2015) [5] the study found that construction work were engaged manual lifting the raw material carrying and might cause pain, injuries. The study revealed that workers are frequently working at heights of the building, with heavy overhead loads, run heavy machinery and power tools or working under different temperature causes to risk of pain, accidents and injuries. The study highlighted that work engaged in the construction industry is frequently temporary; most construction workers were received daily wages in cash and have neither contractual duties nor benefits. Therefore, they could not invest the health related issues. India's construction workers has been suffer highest injuries accident rate in the work area.

Jill Wells, (2022) [7] the study observed that construction work is worst, dirty, hazardous and unsafe. The study found that works in construction industry is often seen as a way out of health facilities Education or skill. A work-related things working condition that can lead to accidents or death. The health facilities are very little to provide to the workers in their working places. Therefore it causes the accidents injuries and deaths most of the time. Workers handling many types of the works with different and various materials it leads the musculoskeletal disorders eventually.

Mathew *et al.*, (2016) [8] the study found that construction workers engaged in the industry are sufferers of various occupational disorders and psychosocial stresses, which lead to health problems. The places where the construction workers are engaged Poor working conditions, no first aid, no sanitation lack of health benefits can lead to poor quality of life (QOL) and mental distress among workers. The study concluded that performance of a workers day to day is typically accounted for bad health including mental disorders are experienced. Hence. Health problems are common in this Industry.

Pallavi & Pandit, (2024) [9] the study observed that construction workers were among those who suffered severely. This group of workers had to deal with noteworthy social and economic difficulties as a result of the lockdown measures in addition to the immediate health concerns brought on by the virus. With the healthcare system overworked by the pandemic, non-COVID medical needs were frequently overlooked. The lack of access to healthcare services during the lockdown period increased their vulnerability to COVID-19 and other health disorders.

Pramanik & Chackrabarti, (2007) [10] the study found that health related major problems of construction workers are frequently due to working for many improper number of hours, staying away from home for many months, bad habits, absence of health security, misunderstanding about consumption alcohol, stress, skin problems, heart sexual behaviour and sexual health problems, physical health problems. Hence, the employers must create the health awakes among the construction workers

Sultana *et al.*, (2015) [13] the construction workers are frequently experienced of headache, backache, joint pains, heart, injuries skin diseases, lung disorders like silicosis, other musculoskeletal disorders, in work life. The study found that hazards includes handling of different tools and machines required for construction, and exposure to harsh environmental conditions like heavy temperature of sun, rain, gusty and so on, which result in accidents and adverse health conditions causes mental health illness and disorders. The study revealed that construction workers being unprotected to multiple dangers experienced working and living places. They are exposed to physical, chemical, biological, ergonomic hazards and environmental, mental related issues eventually.

Aim of the present Study

The purpose of the present research study is to be understand the Covid-19 epidemic has causes the health of the construction workers in the Karnataka. The study aim to investigate pandemic effects on the health status.

Objectives of the Present Study

- To know the health status of different types construction workers working in Karnataka.
- To understand the skill level of the construction workers.
- To evaluate the health level of the construction workers.

Hypotheses

Hypotheses

- **H₀:** there is no significance relationship between health status and health conditions of the construction workers during the covid -19.
- **H₁:** There is a significance relationship between health status and health conditions of the construction workers.
- **H₀:** There is no significance relationship between reasons for health problems and morbidity level of the construction workers during the covid-19.
- **H₁:** There is a significance relationship between reason for health problems and morbidity level of the construction workers.

Research Methodology

The present study is adopted the descriptive and as well as diagnosis research design to understand the health vulnerability, health variables among the construction Workers. The both design focuses on characteristics, health issues or health securities as they exist without influencing or manipulating the study environment. The method is being understand the skills levels, health status, health problems, types of diseases which experienced by the construction workers.

Data Collection

The primary data for present study was collected through a structured questionnaire administered to a representative sample of construction workers from four administrative regions of Karnataka. The questionnaire sections on reasons for health, treatment taken to illness, types of treatment taken during the illness, level of suffering and morbidity level of information the construction workers been gathered. The questionnaire instrument was pre- tested to ensure clarity and relevance before the data collection

Data Analysis

The questionnaire data was analysed using statistical software (e.g., SPSS.27) to perform descriptive statistics (mean, median, and mode) and inferential statistics (Chi square, ANOVA) to identify significant changes in health vulnerability and impact's on the construction workers.

Variables

Dependent Variables

Health status, health, morbidity level.

Independent Variable

Construction workers, regions, skill level

Sampling

A stratified random sample technique was adopted for sampling procedure to assess the representativeness of the study across the study area in Karnataka. Stratification is the process of separating the population into separate homogeneous groups according to particular attributes that are considered significant to the goals of the study. Stratification allows for a more analysis of how different health factors may influence the workers to experience the health vulnerability in their life.

Results and Discussion

Table 1: Types of Workers

Types of Workers								
			Types of workers				Total	
			Helpers	Assistant Mason	Mason	Supervisor		
Regions	Bangalore region	Count	17	14	9	10	50	
		Expected Count	17.5	8.3	16.0	8.3	50.0	
		% within Regions	34.0%	28.0%	18.0%	20.0%	100.0%	
		% within types of workers	24.3%	42.4%	14.1%	30.3%	25.0%	
		% of Total	8.5%	7.0%	4.5%	5.0%	25.0%	
	Kalburgi region	Count	16	9	10	14	49	
		Expected Count	17.2	8.1	15.7	8.1	49.0	
		% within Regions	32.7%	18.4%	20.4%	28.6%	100.0%	
		% within types of workers	22.9%	27.3%	15.6%	42.4%	24.5%	
		% of Total	8.0%	4.5%	5.0%	7.0%	24.5%	
	Mangalore Region	Count	21	5	19	5	50	
		Expected Count	17.5	8.3	16.0	8.3	50.0	
		% within Regions	42.0%	10.0%	38.0%	10.0%	100.0%	
		% within types of workers	30.0%	15.2%	29.7%	15.2%	25.0%	
		% of Total	10.5%	2.5%	9.5%	2.5%	25.0%	
	Kodagu Region	Count	16	5	26	4	51	
		Expected Count	17.9	8.4	16.3	8.4	51.0	
		% within Regions	31.4%	9.8%	51.0%	7.8%	100.0%	
		% within types o workers	22.9%	15.2%	40.6%	12.1%	25.5%	
		% of Total	8.0%	2.5%	13.0%	2.0%	25.5%	
	Total		Count	70	33	64	33	200
			Expected Count	70.0	33.0	64.0	33.0	200.0
			% within Regions	35.0%	16.5%	32.0%	16.5%	100.0%
			% within types of workers	100.0%	100.0%	100.0%	100.0%	100.0%
			% of Total	35.0%	16.5%	32.0%	16.5%	100.0%
Pearson Chi Square Value-27.480 df: 9 Asymptotic Significance 0.000								

Pearson Chi Square Value-27.480 df: 9 Asymptotic Significance 0.000

Types of the workers in different four Region in Karnataka presented in the above table. It is clearly indicated that 35 Percent workers are helpers, 16 Percent of Assistant mason, 32 Percent of mason and 16. 5 Percent of the Supervisors are found in the fourth regions of Karnataka. Therefore, most of the workers are helpers and followed by the

Masons. The Chi-Square test for goodness of fit is significant at a 5 Percent level. The study that conclude that there is a statistically significant association between the variables. The study conclude that most of the workers are the grassroots level workers are working in the construction industry.

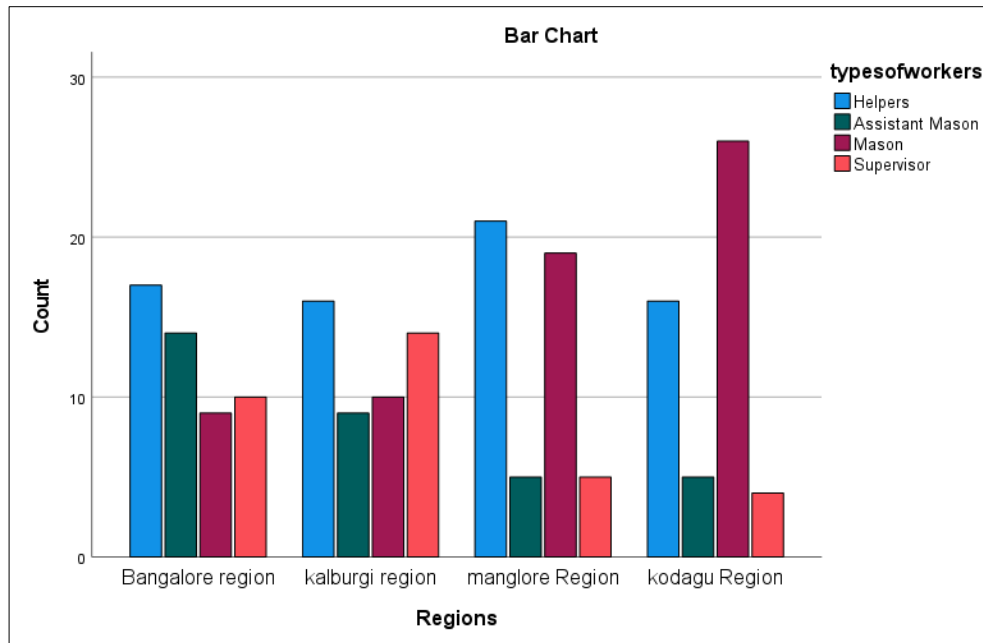


Fig 1: Types of Workers

Table 2: Frequency Distribution of Skill Level of Construction Workers

Description	Frequency	Percent
Unskilled	90	45.0
Semi-Skilled	47	23.5
Skilled	45	22.5
Supervisor	18	9.0
Total	200	100.0

Source: Computed by the researcher

The skill level of the construction workers are presented in the above table. The unskilled workers are 45 Percent, Semi-skilled workers are 23.5 Percent, Skilled workers are 22.5 Percent and supervisory workers are 9 Percent. The unskilled workers are most found in the building construction industry. Hence most of the unskilled workers are highly depending on the construction industry for livelihood. The construction sectors providing jobs to the unskilled workers as Maximum level.

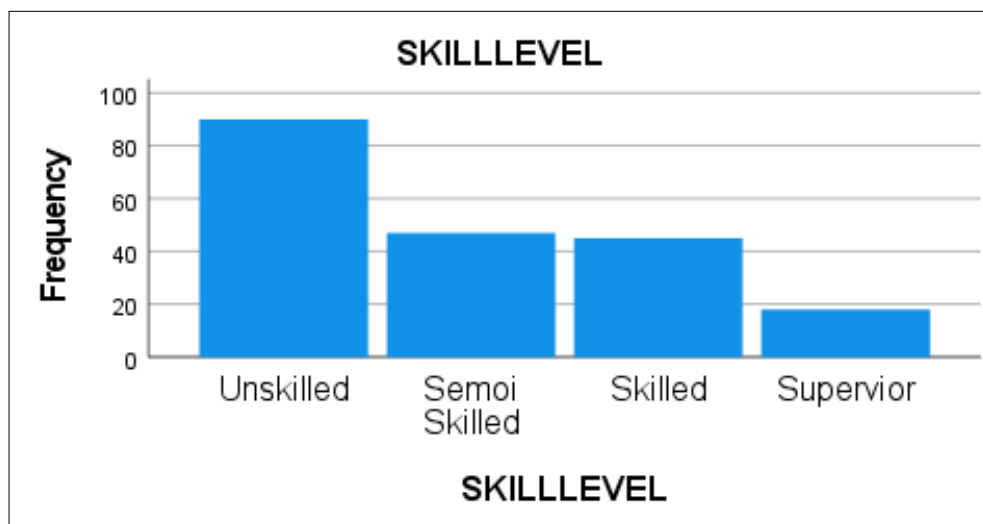


Fig 2: Skills levels of the construction workers

Table 3: Frequency Distribution of Health Level

Description	Frequency	Percent
Nil	31	15.5
Mild	51	25.5
Moderate	104	52.0
Severe	14	7.0
Total	200	100.0

Source: Computed by Researcher

Level of suffering the health issues of the construction workers is presented in the above table. The Most of the workers are moderate level (52%), and mild level (25.5%), severe (7%) suffering from the various health issues. Therefore, the study conclude that majority workers are suffering moderate level of various health issues. The workers are required health facilities.

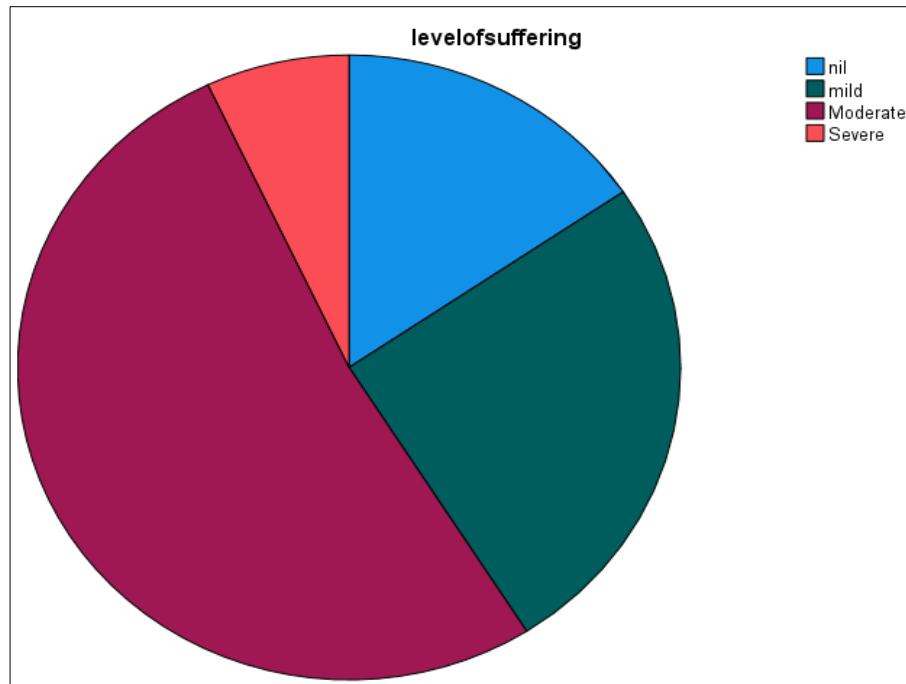


Fig 3: Level of Suffering Health Issues

To prove/disprove the hypothesis, necessary data has been considered from the study and the Researcher has applied ANOVA test and the result of the test is provided in the below table.

ANOVA Health Problems

Table 4: One-way ANOVA test between Health Problems with Respect to Construction Workers

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	62.002	4	15.500	15.555	.000
Within Groups	194.318	195	.997		
Total	256.320	199			

Source: Computed

The study attempted to examine whether any significance relationship in the health status and health problems is. As there are more than two categories of the workers, the researcher has applied Analysis of Variance statistic the test of the analysis is produced in the above table. As there are more than two categories of workers, it is found from the computation that the 'F' value is significant. The result shows that the computed 'F' value (15.555) is greater than the table value (2.90.) and P value is > 0.005. As result, the researcher rejects the null hypothesis and accepts that the difference is statistically significant. The study concludes that there is a significant difference in Relationship between Health Status and Health Issues of the construction workers.

- **H₀:** There is no significance relationship between reasons for health and morbidity level of the construction workers.
- **H₁:** There is a significance relationship between reason for health and morbidity level of the construction workers.

To prove/disprove the hypothesis, necessary data has been considered from the study and the Researcher has applied ANOVA test and the result of the test is provided in the below table.

Table 5: One way Anova Test between Health Problems and Morbidity level of the Construction Workers

ANOVA					
Morbidity level					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	113.538	3	37.846	27.485	.000
Within Groups	269.882	196	1.377		
Total	383.420	199			

Source: Computed

The study attempted to examine whether any significance relationship in the health problems and morbidity level. As there are more than two categories of the workers, the researcher has applied Analysis of Variance statistic the test of the analysis is produced in the above table. As there are more than two categories of workers, It is found from the computation that the 'F' value is significant. The result shows that the computed 'F' value (27.485). P value is < (0.05). There is a significantly relationship between reason for health and morbidity level. As result, the researcher rejects the null hypothesis and accepts that the difference is statistically significant. The study concludes that there is a significant difference in the Significance Relationship between Health problems and morbidity level of the construction workers.

- **H₀:** There is no significance relationship between reasons for health problems and morbidity level of the construction workers
- **H₁:** There is a significance relationship between reason for health problems and morbidity level of the construction workers.

Table 6: Morbidity level of Workers

Morbidity level							
			Types of workers				Total
			Helpers	Assistant Mason	Mason	Supervisor	
Morbidity level	Problems of Eyes	Count	0	0	6	18	24
		Expected Count	8.4	4.0	7.7	4.0	24.0
		% within morbidity level	0.0%	0.0%	25.0%	75.0%	100.0%
		% within types of workers	0.0%	0.0%	9.4%	54.5%	12.0%
		% of Total	0.0%	0.0%	3.0%	9.0%	12.0%
	deafness	Count	0	0	9	3	12
		Expected Count	4.2	2.0	3.8	2.0	12.0
		% within morbidity level	0.0%	0.0%	75.0%	25.0%	100.0%
		% within types of workers	0.0%	0.0%	14.1%	9.1%	6.0%
		% of Total	0.0%	0.0%	4.5%	1.5%	6.0%
	Hypertension	Count	0	7	32	1	40
		Expected Count	14.0	6.6	12.8	6.6	40.0
		% within morbidity level	0.0%	17.5%	80.0%	2.5%	100.0%
		% within types of workers	0.0%	21.2%	50.0%	3.0%	20.0%
		% of Total	0.0%	3.5%	16.0%	0.5%	20.0%
	Breathlessness	Count	5	18	6	5	34
		Expected Count	11.9	5.6	10.9	5.6	34.0
		% within morbidity level	14.7%	52.9%	17.6%	14.7%	100.0%
		% within types of workers	7.1%	54.5%	9.4%	15.2%	17.0%
		% of Total	2.5%	9.0%	3.0%	2.5%	17.0%
	Musculoskeletal disorder	Count	65	8	11	6	90
		Expected Count	31.5	14.9	28.8	14.9	90.0
		% within morbidity level	72.2%	8.9%	12.2%	6.7%	100.0%
		% within types of workers	92.9%	24.2%	17.2%	18.2%	45.0%
		% of Total	32.5%	4.0%	5.5%	3.0%	45.0%
Total		Count	70	33	64	33	200
		Expected Count	70.0	33.0	64.0	33.0	200.0
		% within morbidity level	35.0%	16.5%	32.0%	16.5%	100.0%
		% within types of workers	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	35.0%	16.5%	32.0%	16.5%	100.0%

Source: Computed

The morbidity of the workers are presented in above table. The present table indicated that 12% worker experienced eyes related problems, 6% workers have experienced the deafness, 20% workers have experienced the hypertension problems, 17% workers suffering from breathlessness problems and finally 45% workers been experienced the musculoskeletal problems. Therefore, Majority workers been experienced the musculoskeletal problems in the pandemic. The musculoskeletal problems are common health issues in the sectors.

Conclusion

The construction workers are very victims of many illness and disorders is being affected in regular work in the construction industry. The present study was being examines the relationship between construction workers' work, health, morbidity levels and their health problems during this period. In the pandemic period most of the workers been experienced the musculoskeletal, eye related, hypertension and many severity of health issues they come across the many places of the Karnataka. The construction workers are exposed to multiple injuries wounds, lungs related issues at working and living places even in the Covid 19 pandemic also. They are exposed to physical, chemical, biological, ergonomic hazards and environmental and psychosocial risks. The construction workers are those, who perceive more clearly the health securities and facilities. It has been evidenced by a number of studies that construction industry is one of the most hazardous work place industries with high rates of fatalities, injuries might causes health

problems. The construction workers are typically exposed to physical, chemical, biological, ergonomic hazards and environmental and psychosocial risks necessary measures should be taken to protect the workers by reducing exposure to predominant hazards. The study highlighted that different types of health problems experienced by the workers in the industry. The study provides recommendations for government must to implement more effective health securities from the welfare board. The government must prioritize addressing their health issues and ensure that the entire policy framework is equitable and justifiable for the construction workers. Only through comprehensive and inclusive policies can the challenges faced by construction workers be effectively addressed.

References

1. Anjana NC. The Impact of COVID-19 Pandemic on the Livelihood of Informal Sector Workers in Kerala. Disaster & Development. 2023;12(2):12-25.
2. Deacon CH. The health status of construction workers [thesis]. Port Elizabeth: The University of Port Elizabeth; 2020.
3. Deshmukh SA, Ghooli S. A Study of Morbidity Pattern Among Construction Workers in Kalaburagi, North Karnataka, India. National Journal of Community Medicine. 2015;6(03):362-366.
4. Goswami D, KK S. Risk-reducing strategies and labour vulnerability during the pandemic in India. PMC. 2024.
5. Dutta P, Rajiva A, Andhare D, Azhar GS, Tiwari A, Sheffield P, *et al.* Perceived heat stress and health

- effects on construction workers. Indian Journal of Occupational and Environmental Medicine. 2015;19(3):151-158.
6. Jayakrishnan T, Thomas B, Rao B, George B. Occupational health problems of construction workers in India. International Journal of Medicine and Public Health. 2013;3(4):225-229.
 7. Wells J. Characteristics of construction employment. SN Soc Sci. 2022;2(6):1-15.
 8. Mathew G, Ramesh N, Shanbhag D, Goud R, Subramanian S, Lobo C, *et al.* Quality of life and probable psychological distress among male workers at a construction site, Kolar district, Karnataka, India. Indian Journal of Occupational and Environmental Medicine. 2016;20(1):54-58.
 9. Pallavi K, Pandit K. The impact and challenges of COVID-19 pandemic on construction workers and their livelihood in Patna district. International Journal of Research in Management. 2024;6(2):123-133.
 10. Pramanik S, Chackrabarti S. A Study on Problems of Construction Workers in West Bengal Based on Neutrosophic Cognitive Maps. International Journal of Innovative Research in Science, Engineering and Technology. 2007;2(11):6510-6517.
 11. Poornamathi NC, MK. A critical analysis of problems faced by building and other construction workers in India. Indian Journal of Legal Review. 2024;5(5):45-52.
 12. Rupakheti D, Pradhan PMS, Basel P. Occupational Safety and Health Vulnerability among Brick Factory Workers in Dhading District, Nepal. Annals of Global Health. 2018;84(3):481-487.
 13. Sultana N, Ferdousi J, Shahidullah M. Health Problems among Women Building Construction Workers. Journal of Bangladesh Society of Physiologist. 2015;9(1):31-36.