

Navigating Challenges: A Comprehensive Study on Well-Being and Safety of Construction Workers

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ABSTRACT:

This study brings light to challenges faced by construction workers in Madurai city. The study mainly focuses on various information regarding daily routine and its impact on mental health. This study attempts to find out their problems and to make aware of schemes available for them and also to provide suggestions to the government to help them to rejuvenate their work and livelihood. For this we have prepared questionnaires and collect the information directly from them in person. With reference to articles based on the topic, we analyzed their problems.

Keywords: Construction workers, Safety, Challenges, Mental Health, Well-Being, Government, Schemes.

INTRODUCTION:

Construction workers are skilled tradespeople who build the structures we use every day, such as homes, offices, and roads. They work with various materials, including wood, concrete, and steel, following detailed plans to ensure safety and quality. Jobs in construction include carpenters, plumbers, and electricians, all of whom work together in teams to bring projects to life. The history of construction dates back to ancient civilizations like the Egyptians and Romans, who built impressive structures with simple tools. Over time, construction techniques advanced, particularly during the Industrial Revolution when machinery like cranes sped up the process. Today, construction workers use modern tools and follow safety regulations to continue building the world around us. They also face challenges such as working in all types of weather conditions and ensuring that projects meet environmental and sustainability standards. Additionally, the construction industry plays a significant role in the economy, providing millions of jobs and driving growth in communities worldwide.

STATEMENT OF THE PROBLEM:

This study aims to perceive “Well-being and safety of construction workers” in Madurai city. The cause to study about the construction workers is one of the second largest unorganized workers in India after the agriculture sector. Most of the construction workers are either landless or very small landowners in rural areas who come to the construction sites in search of living. Their characteristics like to come from poor families with low or no level of education, migration to urban areas from villages in search of work, ignorance, poor health, frequent employment of the whole family at most of building erection work, high

involvement of female labourers in construction. The main problems faced by construction workers are quality of life and safety. Despite being the largest sector in India, construction workers are unable to lead a good and healthy environment.

SCOPE OF THE STUDY:

This study is an attempt to find out their problems, and to make these workers aware of the schemes available for them, which may benefit them for their lifetime and also to provide suggestions to the government as to help them to rejuvenate their work and their livelihood. It examines workplace hazards such as exposure to heavy machinery, falls, noise, and harmful substances, as well as the effectiveness of safety standards and protective measures in mitigating these risks. The study also delves into the psychological well-being of workers, focusing on issues like stress, anxiety, and the impact of long working hours. Finally, the study looks at the role of technological advancements in enhancing safety, such as wearable devices and automated machinery, and aims to provide recommendations for creating safer, healthier, and more supportive work environments for construction workers.

OBJECTIVES:

1. To study the safe and satisfactory working conditions of construction workers.
2. To analyze the challenges faced by construction workers.
3. To create an awareness about the Government schemes.
4. To correlate the SDG with welfare schemes.

REVIEW OF LITERATURE:

Samuel Frimpong, Riza Yosia Sunindijio, Cynthia Changxin Wang (Mar, 2022) in the article titled “Mental Health Conditions among Young Construction Workers” highlighted the need for future research to focus on health and the case of the global south. This study showed young construction workers to have higher rates of depression, substance abuse disorder, and anxiety. This study focused on the physical, mental, emotional, social, poor work environment and stressful construction tasks. This study reflects an awareness of the need to give attention to the positive mental health of young construction workers and it revealed the scarcity of research on the global south.

Hamed golzad, Azefah Teimoory, Syed Javid Mousavi, Aya Bayramova, David jedward (September -2023) in the study called “Mental Health Causative In The Construction Industry” This study is the first of its kind, looking at how construction workers stay safe in India. They checked 64 articles from 2004 to 2019 using words like "construction safety" and "ergonomics in construction." They found that most articles talk about safety management climate, performance, muscle issues, and behavior-based safety. But, there's a problem – many studies don't have a good foundation in theory. The study says we need more research to make construction work safer in India. So, in simple words, this paper is important because it tells us what's going on with safety research for construction workers in India and shows there's more we need to find out.

Vignesh Kumar Chellapa, Vasundhara Shrivastava, Urmi Ravindra salve (Nov-2020) In the study called “A Systematic Review of Construction Workers health and safety Research in India”. This study is the first of its kind, looking at how construction workers stay safe in India. They checked 64 articles from 2004 to 2019 using words like "construction safety" and "ergonomics in construction." They found that most articles talk about safety management, climate, performance, muscle issues, and behavior-based

safety. But, there's a problem – many studies don't have a good foundation in theory. The study says we need more research to make construction work safer in India.

Mohammad Tanvi Newaz, Helen Giggins ,and Udara Rana Ranasinghe (October 2022)In the study called “A critical analysis of Risk factors and Strategies to improve mental health issues of construction workers” This study looks at mental health in construction work to help people in the field. They used a Systematic Literature Review to find 100 problems and 76 ways to prevent them. These were sorted into three groups: individual, workgroup, and organizational levels. The study shows that mental health issues are a big problem worldwide, especially for construction workers. The researchers suggest practical ways to improve mental health by understanding and dealing with different challenges in construction work.

SDG FOR CONSTRUCTION WORKERS

GOAL 1: NO POVERTY

Poverty is a phrase which is faced by most of the construction workers his is the main reasons for the construction workers to choose this job .Due to migration of people from other State for this specific job poverty of our construction workers is in peak .This goal aims to eradicate every form of extreme poverty including the lack of food, clean drinking water, and Sanitation

.SDG 1 focuses not just on people living in poverty, but also on the services people rely on and social policy that either promotes or prevents poverty.

GOAL 3 : GOOD HEALTH AND WELL BEING

The construction workers faced a lot of problems related to their health like joint pain, chemicals, Allergy, Asthma, Eye problems etc. They face this type of problem because of their heavy work overtime and deadlines. Most of the construction contractors prefer less number of workers, so their workload is increasing. Which has to be done by three person is done by one person's ensure health and well-being for all, including a bold commitment to end the epidemics of AIDS, tuberculosis, malaria and other communicable diseases by 2030.

GOAL: 6 CLEAN WATER AND SANITATION:

The Major Problem by construction workers in their working sites is that there will be no proper sanitation and clean water facilities for them. Due to this Majorities of construction workers Mainly women face challenges during menstrual cycle. Most of the construction sites will have no proper facilities for restrooms. This Goal Ensures availability and sustainable management of water and sanitation for all." Goal 6 Focuses on, achieve universal and equitable access to safe and affordable drinking water for all, and equitable sanitation and hygiene for all, especially paying special attention to the needs of women and girls and those in vulnerable situations.

RESEARCH METHODOLOGY:

SAMPLE SIZE: 50

DATA COLLECTION: Primary Data and Secondary Data

AREA OF STUDY: The study was conducted among the construction workers

SAMPLE AREA: Madurai.

ANALYSIS OF DATA: Simple Percentage and Likert Scale.

TABLE 1: CLASSIFICATION REGARDING HEALTH ISSUES FACED CONSTRUCTION WORKERS

HEALTH ISSUE	RESPONDENTS	PERCENTAGE
JOINT PROBLEM	36	70.6
DISC PROBLEM	5	9.8
EYE PROBLEM	6	11.8
CHEMICAL ALLERGIES	4	7.8

Interpretation

It is inferred from the above table 3.14 out of 51 respondents, maximum of 36 respondents faced joint problem (70.6%),5 respondents faced disc problem (9.8%),6 respondents faced eye problem (11.8%) and 4 respondents faced chemical allergies (7.8%).

TABLE 2: MONTHLY MEDICAL EXPENSES

MONTHLY EXPENSE	RESPONDENTS	PERCENTAGE
500 - 1000	47	92.2
1000 - 2000	3	5.2
2000 - 3000	0	0
MORE THAN 3000	1	2

Interpretation

It is inferred from the above table out of total 51 respondents maximum 47 respondents having medical expenses between 500-1000 (92.2%),3 respondents are having medical expenses between 1000-2000 (5.2%), no respondents incurring medical expenses between 2000-3000,1 respondent is having medical expenses above 3000 (2%)

TABLE 3: CLASSIFICATION REGARDING DISCUSSING MENTAL HEALTH CONCERNS

DISCUSSING WAYS	RESPONDENTS	PERCENTAGE
EMBRACING OPEN CONVERSATION	24	47.1
WILLING TO SHARE SELECTIVELY	18	35.3
PREFER KEEPING IT PRIVATE	9	17.6

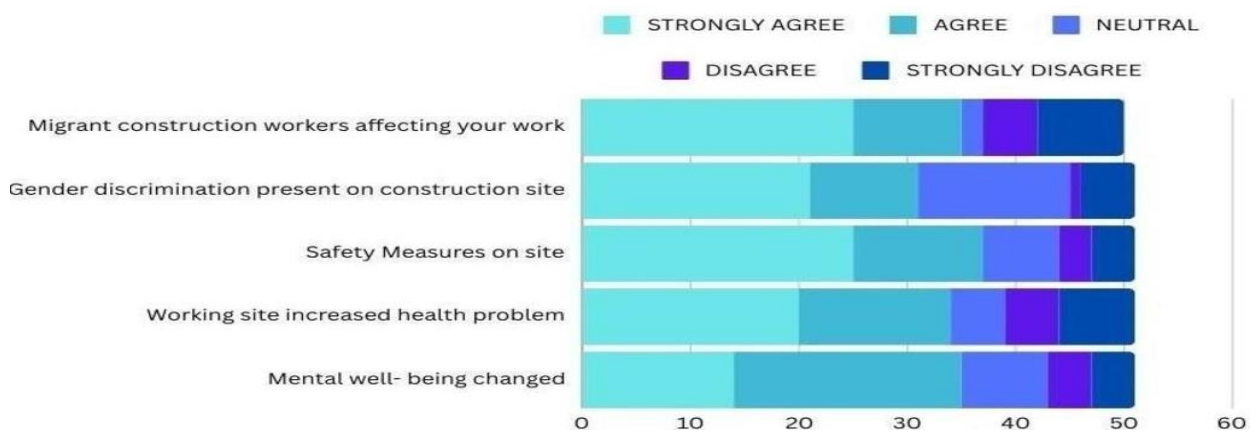
It is inferred from the above table out of total 51 respondent maximum 24 respondent are embracing open conversation about health and mental concerns (47.1%),18 respondents are willing to share selectively about health and mental concerns (35.3%),9 respondents are prefer to keep it private about health and medical concerns (17.6%)

TABLE 4: CLASSIFICATION REGARDING CHALLENGES FACED BY CONSTRUCTION WORKERS

CHALLENGES	RESPONDENTS	PERCENTAGE
NATURAL CALAMITIES	4	19.6
TRAVELLING TO REMOTE AREAS	13	25.5
CONFLICT BETWEEN THE WORKERS	4	5.9
SAFETY MEASURES	12	21.6
LOW WAGES	14	27.5

It is inferred from the above table 3.11 that, out of 51 respondents, maximum of 14 respondents faced low wages as their challenge (27.5%),9 respondents said natural calamities as their challenge (19.6%),13 respondents faced challenges due to traveling to remote areas (25.5%),safety measures are the challenge faced by 12 respondents (21.6%),and minimum of 3 respondents faced conflicts between the workers as their challenges (5.9%).

TABLE 5 : CLASSIFICATION REGARDING CHANGE IN MENTAL HEALTH



Many respondents strongly agree or agree that migrant construction workers affect their work, indicating possible concerns about competition or integration. Regarding gender discrimination, opinions are mixed, with a notable portion either agreeing or remaining neutral, reflecting varying perspectives on its prevalence. On safety measures, while some acknowledge their presence, others disagree, pointing to inadequacies in implementation.

A significant number of respondents agree that working conditions have led to increased health problems, underscoring the need for better occupational health support.

HYPOTHESIS (ONE-WAY ANOVA)

One Way ANOVA is used for testing whether a significant effect exists between Monthly Income and Number of hours of work. Analysis of Variance (ANOVA) is a statistical formula used to compare variances across the means of different groups. For the analysis, two variables were chosen: Working atmosphere and Well-being of the workers

Framing the Hypothesis:

Null Hypothesis: Working atmosphere has a significant effect on the well-being of the workers

Alternative Hypothesis: Working atmosphere does not have a significant effect on the well-being of the worker

TABLE 6 : ANOVA RESULTS FOR WORKING ATMOSPHERE AND WORKERS WELL BEING

	N		Sum of squares	Df	Mean Square	F	Sig
Improved significantly	14	Between Groups	1.057	4	1.063	.516	.724
Slightly improved	21	Within Groups	2.049	47	.756		
Remained the same	8						
Slightly declined	4						
Declined significantly	4						
Total	51	Total	3.556	51			

The ANOVA test reveals whether the results between the groups are significant or not. If the p-value is greater than 0.05, then it is taken as there is no significant relationship between the two groups. But, in the analysis, the value is 0.082.

So we have accepted the Null hypothesis. Therefore, it is concluded that the Monthly Income does not have a significant effect on the medical expenses.

LIMITATION OF THE STUDY:

1. Sample size is relatively small, consisting of 51 participants, as we focused on collecting data from within and around our local area.
2. It was difficult to gain access to construction sites or workers due to safe regulations or specific site restrictions.
3. Coordinating schedules was challenging, especially when they have any priorities or commitments.

FINDINGS:

1. Out of 51 respondents nearly 80% constitute men construction workers.
2. Out of 51 respondents, 90% of the respondents are living in rental houses.
3. Nearly 75.3% of the respondents are below SSC (Secondary School Certificate).

4. Out of 51 respondents, a maximum of 27 respondent family members are involved in construction work.
5. The majority of respondents spend between Rs.100-500 as their medical expenses, and they belong to the age category of 31-50.

SUGGESTIONS

1. Regular governmental monitoring and communication should be established through periodic meetings, camps, and direct interactions with construction workers to understand and address their needs effectively.
2. Health and welfare measures should be strengthened by implementing suitable schemes, improving safety standards, and providing proper sanitation facilities at construction sites.
3. Administrative procedures should be streamlined to reduce delays in processing workers' applications for various schemes and addressing their grievances promptly.
4. Educational initiatives should be implemented, including proper training in equipment handling, safety protocols, and awareness about occupational hazards, especially regarding chemical handling.
5. Legal protections should be enhanced by ensuring proper documentation of employment terms in contracts, providing reservations for workers' children's education, and establishing clear guidelines for contractors to follow regarding workers' rights and safety measures.

CONCLUSION

The article was done with the objective of understanding awareness about government schemes among construction workers and facilitating their enrollment. The study provided valuable insights into the challenges and problems faced by construction workers in the industry. Through field surveys and direct interactions, it revealed the real-life struggles of unorganized workers in the construction sector. The research highlighted several critical issues including gender discrimination, poverty, lack of education, and fear of scams that prevent workers from accessing government benefits. Through in-depth research and engagement with construction workers, it became evident that these workers face numerous challenges, including significant safety risks and inadequate access to essential resources like healthcare and training. The main limitation of this study is its reliance on field surveys and direct interactions, which may not represent the entire construction worker population across different regions. Future research should focus on evaluating the effectiveness of digital solutions and training programs to improve workers' access to government schemes and essential services, while also examining how successful worker welfare programs from other regions could be implemented locally. Such studies would help develop more practical solutions for construction workers' wellbeing.

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