

# Community Based Cross-Sectional Study to Assess the Health Problems and Quality of Life Among Migrant Construction Workers in Chennai

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## Abstract

**Background:** Although migrants often have less access to medical care, migrants are more likely to experience physical and mental health problems. As a result, the following goals guided the conduct of this study: to characterize the health issues faced by migrant workers in Chennai's construction industry, to ascertain their quality of life, and to evaluate their tendency to seek medical attention.

**Methods:** This cross-sectional study was carried out in Chennai's construction sites using community participants. The study included migrant laborers from across the state who work on construction sites for more than a year, both men and women over the age of 18. The research was carried out in 2023 between March and April. Convenient sampling was done, and 400 people were considered the sample size. Data were gathered using a pretested, structured Validated Questionnaire.

**Results:** The study showed that 13% had respiratory disease, 5.1% had acute febrile illness and 5.1 % had gastrointestinal disease. About 13% of the respondents went to nearby medical shop when they have any medical problems. About 62.0% of the participants had poor quality of life. Education ( $P=0.042$ ), duration of working hours ( $P=0.034$ ) and tobacco use (0.032) were found to be significantly associated with quality of life.

**Keywords:** occupational health, health problems, migrant construction workers, quality of life, health seeking

## Introduction

Urbanization has been a growing trend in Indian society. India's urbanization rate increased from 27.81% in 2001 to 31.16% in 2011, according to the 2011 Census.[1] The two main drivers of migration are debt and destitution. India's states differ substantially in terms of their level of development; states like Kerala, Tamil Nadu, Gujarat, and Maharashtra have advanced further than states like Uttar Pradesh, Bihar, Jharkhand, and Chhattisgarh. Roughly one-third of India's labor force consists of migrant workers, who endure social isolation and restricted access to basic amenities such as water, sanitation, healthcare, and education, in addition to long hours and meager pay. [2,3]

The delivery of healthcare was also disrupted by internal displacement brought on by political unrest or migration due to trafficking. One of the oldest sectors in India is the construction industry, which employs a sizable number of people from low socioeconomic backgrounds. [4,5,6] Chennai, the capital city of Tamilnadu is experiencing a rise in the need for laborers. This is a result of the rapidly expanding fields of information technology, housing, trade, industrialization, metro rail construction and software development.[7] Amidst the city's towering buildings, thousands of migrant construction workers reside in makeshift sheds and tents by the side of the road. They either remain by the side of the road or on a building site/basement. The sheds lack electricity,

running water, sanitary facilities, ventilation, and safety features. [7] The employees frequently have a variety of illnesses. Frequent illnesses are caused by unclean water, unclean surroundings, and fly and mosquito-infested living areas.[5] The children frequently experience cholera, malnourishment, colds, and coughs brought on by breathing in paint fumes and dust and cement particles. Children are frequently seen on construction sites playing in the work areas and causing minor mishaps.[5]

Even though migrants are a significant population that is more likely to contract STIs or the HIV virus, there are not enough readily available services related to sexual health available for them.[7] Research from all over the world, including India, has shown that migrants use health services at a lower rate than the urban local population. This may be the result of a number of things, including cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, and disease pattern and health service issues, understaffing medical facilities and the marginalization of immigrant communities in general practice and primary care. Even though healthcare services are concentrated in cities, poor access to healthcare is caused by unpaid sick leave and financial insecurity [8–10].

The concept of quality of life, or QoL, is used to assess the level of wellbeing in a variety of vulnerable populations, such as migrants and refugees. [11–13] As "Individuals" perception of their place in life in relation to their goals, standards, expectations, and concerns, as well as the culture and value systems in which they live, is how the World Health Organization (WHO) defined quality of life. It is a wide term that is highly impacted by a person's level of independence, mental health, physical well-being, social connections, and proximity to notable environmental features.[14] This concept brought to light the fundamental subjectivity of life's quality.[15] Prior empirical research indicated that psychological disorders and subsequent physical illness were strongly predicted by perceived quality of life. [16,17]. Therefore, understanding and improving health, wellbeing, and mental health within a variety of vulnerable groups—including migrants from rural to urban areas who moved in search of employment and a better life—requires research on quality of life (QoL) within a population.

Most of the migrant workers suffer from multiple health problems which makes them more susceptible to frequent sickness absenteeism and loss of income. They need to be treated appropriately and get back to their work at the earliest, which mainly depends on their health seeking behaviour.

Studying QoL among a population is an essential step to understand and improve health status, well-being, and mental health among various vulnerable populations, such as rural-to-urban migrants who moved for seeking jobs and a better life. Hence this study was conducted with the following objectives:

1. To outline the health issues that Chennai's migrant construction workers face.
2. To assess the quality of life of migrant laborers employed in construction in Chennai
3. To evaluate the health-seeking habits of Chennai's migrant construction labor force

## Methodology

This cross-sectional study was carried out in Chennai's construction sites using community participants. The study included migrant laborers from across the state who work on

construction sites for more than a year, both men and women over the age of 18. Workers from other countries who declined to take part in the study were not included. The research was carried out in 2023 between March and April.

**Sampling and sample size:** Men's overall quality of life (QoL) was found to be 55.9, with a standard deviation (SD) of 3.7, in a study that was conducted in Bengaluru18. 400 was the sample size determined with a relative precision of 10% using the formulas  $4(SD)^2/d^2$ . The study participants were chosen using convenient sampling method until the required sample size was attained.

**Ethical Concerns:** Before the study began, approval from the institutional ethics committee, Government Medical College, Omandurar Government Estate, was secured. (IEC approval number **88/ IEC/ GOMC/ 22**). We obtained informed consent from the participants. Privacy was guaranteed.

Research aid: arranged and verified beforehand A validated questionnaire was created in English, translated into the local language of the migrants by a professional scholar, and then translated back into English to guarantee linguistic validity. semi-structured survey comprising

1. a basic demographic profile and inquiries about potential health risks at work.

2. The WHOQOLBREF scale's 14 standard questionnaire format was used to evaluate QoL. This instrument comprises 26 questions divided into four domains: environmental health (Domain 4), social relationships (Domain 3), psychological health (Domain 2), and physical health (Domain 1). A Likert scale with five points is used to rate each of these domains. In accordance with WHO guidelines, single item values were added to generate 25 raw scores for each domain. This resulted in a score that ranged from 0 to 100, with 100 representing the highest value and 0 representing the lowest. Each domain's mean score as well as the overall score were determined.

**Statistical analysis:** Using the Statistical Package for Social Sciences (SPSS) version 21.0, statistical analysis was carried out on all of the collected data that had been coded and entered into an Excel data sheet. Descriptive statistics like percentages and mean with standard deviation were used. Comparison of mean QOL with general characteristics of the patient was done using unpaired t test, if there are two categories and ANOVA was use if there were more than 2 categories. P value of less than 0.05 was taken as statistically significant.

## Results

There were 400 workers total; 380 (or 95%) were men and 20 (or 5%) were women. 385 people (96.4%) were in the 15–45 age range. The workers' average age was  $26.25 \pm 8.49$  years. 324 (81%) of the workers were married; 232 (58%) were Hindus, and 88 (22%) were Muslims. Overall, 228 people (57%) lacked literacy, compared to 96 people (24%) who had completed elementary, secondary, and higher secondary education, 40 people (10%), and 36 people (9%). 266 people (66.7%) in all belonged to a lower social class. Of the 400 workers who migrated, 168 (42%) came from Bihar, followed by 84 (21%) from Rajasthan, 60 (15%) from Jharkhand, 52 (13%) from Nepal, 12 (3%) from Odisha, and 24 (6%), from Assam (Table 1).

Workers suffering from past TB were 4(5.1%) and past malaria were 36(13%). Workers suffering with skin problems were 18(4.5%), respiratory problems like asthma, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, pneumonia, and lung cancer were 52(13%), fever were 20(5.1%), gastrointestinal system disease like Constipation, irritable bowel syndrome (IBS), nausea, gas, bloating and diarrhea were

20(5.1%), musculoskeletal problems were 28(7%). Workers hospitalisation < 1 were 27(15%) and work place injury were 44 (11%). 4.5% workers had eye disease. In all, 192 (48%) of the workers consumed tobacco and 68(6.9%) consumed alcohol (Table 2).

Table 3 shows that 44% workers went to nearby government hospital for health seeking behaviour and about 13% of the respondents went to nearby medical shop when they have any medical problems.

**Table 1** Sociodemographic characteristics of the respondents

Parameters	Subcategory	Frequency	Percentage
Age group	< 15	4	0.1%
	15-45	384	96.4%
	46-60	11	3.1%
	>60	1	0.3%
Gender	Male	380	95%
	Female	20	5%
Marital status	Married	324	81%
	Unmarried	76	19%
Religion	Hinduism	232	58%
	Muslim	88	22%
	Christianity	60	15%
	Sikhism	8	2%
	Jainism	12	3%
Education	Uneducated	228	57%
	Primary	96	24%
	Secondary	40	10%
	Higher secondary	36	9%
Place of origin	Bihar	168	42%
	Rajasthan	84	21%
	Jharkhand	60	15%
	Nepal	52	13%
	Odisha	12	3%
	Assam	24	6%
Duration of working hours	4 to 6 hours	12	3%
	6 to 8 hours	20	5%
	8 to 12 hours	36	12%
	More than 12 hours	36	80%

**Table 2** Medical history of the respondents

Medical history	Frequency	Percentage
1. Tobacco	192	48%
2. Alcohol	68	6.9%
3. Past tb	4	5.1%
4. Past malaria	36	13%
5. Hospitalisation < 1 year	27	15%
6. Fever	20	5.1%
7. Respiratory disease	52	13%
8. Skin disease	18	4.5%
9. Eye disease	18	4.5%
10. Gastrointestinal system disease	20	5.1%
11. Musculoskeletal problems	28	7%
12. Work place injury	44	11%

**Table 3** Health seeking behaviour of the respondents

Parameters	Subcategories	Frequency	Percentage
Vaccination status of children	Fully vaccinated upto age	240	65%
	Not vaccinated up to age	160	35%
Health seeking behaviour	Nearby government hospital	176	44%
	Nearby PHC	172	43%
	Nearby medical shop	52	13%

**Table 4** Quality of life of the participants

Quality of Life	Frequency	Percent
Good	152	38.0
Poor	248	62.0

The mean QOL score was  $262.31 \pm 45.12$ . The QoL scores were further converted into categorical variable by obtaining the mean score and dividing the group into those who got a score above the mean and those below the mean. They were labeled as good and poor QoL.

About 62.0% of the participants had poor quality of life.

**Table 5** Sociodemographic characteristics of the respondents

Parameters	Subcategory	Frequency	Percentage
Age group	< 15	246.21 ± 42.58	0.096
	15-45	282.19 ± 54.38	
	> 45	270.63 ± 32.91	
Gender	Male	267.80 ± 46.73	0.114
	Female	252.84 ± 41.29	
Marital status	Married	268.01 ± 36.83	0.126
	Unmarried	254.63 ± 64.20	
Religion	Hinduism	268.04 ± 35.09	0.256
	Muslim	253.19 ± 67.75	
	Christianism	289.10 ± 73.28	
	Sikhism	233.00 ± 88.12	
	Jainism	254.11 ± 65.20	
Education	Uneducated	212.45 ± 24.28	0.042
	Primary	235.10 ± 35.21	
	Secondary	245.10 ± 45.95	
	Higher secondary	293.01 ± 38.05	
Place of origin	Bihar	277.85 ± 56.19	0.296
	Rajasthan	263.47 ± 47.29	
	Jharkand	256.03 ± 39.49	
	Nepal	268.95 ± 73.04	
	Odisha	254.92 ± 59.64	
	Assam	253.04 ± 63.28	
Duration of working hours	4 to 6	256.78 ± 46.32	0.034
	6 to 8	286.10 ± 46.29	
	8 to 12	246.47 ± 56.21	
	More than 12	237.06 ± 64.47	
Tobacco use	Yes	236.05 ± 35.39	0.032
	No	289.26 ± 47.28	
Alcohol use	Yes	256.05 ± 41.29	0.083
	No	269.23 ± 54.38	

Table 5 shows that education ( $P=0.042$ ), duration of working hours ( $P=0.034$ ) and tobacco use ( $0.032$ ) were found to be significantly associated with quality of life.

## Discussion

Respiratory conditions accounted for the largest morbidity at the construction site (13%). Respiratory issues were reported in 4.86% of workers, according to Gurav et al. [19]. Given that the accommodations are located on campus, there may be a greater chance of dust exposure during and after working hours, contributing to the higher prevalence in this study.

5.4% of the workers at this construction site experienced musculoskeletal issues.

According to Mohopatra[20], 40% of workers experience musculoskeletal disorders that impact different joints and muscles, extending from the foot to the neck. Because most work is mechanized in this study, there is likely less manual labor involved, which contributes to the lower prevalence of musculoskeletal disorders. 5.1% of the workers at this construction site had an acute febrile illness.

According to this survey, 11% of employees suffered an injury while on the job. The construction sector is notorious for having a high accident rate. Over 90% of mishaps can be avoided.[21] Temperature extremes raise the risk of accidents, according to Ramsay [22]. Accidents can occur due to a variety of factors, including age, sex, personal habits (like working while intoxicated), personality traits (like taking risks), and the physical and mental health of the worker. The prevalence of injuries was 25.42% in a study. [23]

The engineering company's regular on-site safety induction training and growing reliance on mechanized work may be contributing factors to the low prevalence of the study. Skin disorders such as fungal infections, contact dermatitis, and eczematous rash affected 4.5% of the workforce. Cement and lime can cause dermatitis that is irritant. It is commonly known that chromate and cobalt-containing cement can cause allergic contact dermatitis. [23]

Due to exposure to chemicals, parasites, or infectious agents at work and in their homes, 5.1% of the study's participants experienced gastrointestinal issues, including loose motions, abdominal pain, constipation, and appetite loss.

Of the workers, 48% reported smoking, which is less than the national prevalence of 57% according to the National Family Health Survey from 2005–2006.[24] According to the National Household Survey on drug abuse, 6.9% of workers reported drinking alcohol, which is less than the 21% national estimate.[25] 44% of the workforce sought medical attention at the adjacent government hospital, while 43% visited the nearby primary health center. For 48% of workers, their quality of life was neither good nor bad.

In our study education ( $P=0.042$ ), duration of working hours ( $P=0.034$ ) and tobacco use ( $0.032$ ) were found to be significantly associated with quality of life. In another study[18], It was observed that marital status, monthly income, type of work and shelter were significantly associated with environment domain of QoL and smoking had an influence on psychological domain of QoL. In our study, the mean QOL score was higher among married individuals but was not found to be significantly different. Our findings show that, having good education, having moderate work hours and avoiding tobacco are determinants of having good quality of life. The HRQoL (Health-Related Quality

of Life) of migrant workers was influenced by factors such as age, monthly income, duration of residency, location of dwelling, and level of contentment with housing. The study found that there is a positive correlation between greater monthly income and higher quality of life (QoL) among migrant workers. This correlation is consistent with previous research that has shown higher QoL during periods of high economic levels [26,27].

Three research [28,29,30] have shown that social support among migrant workers positively influences health behavior. Additionally, support systems such as medical services have been proven to enhance quality of life [23]. Furthermore, migrant workers were able to reduce their stress levels and enhance their quality of life by cultivating a sense of camaraderie and inclusion via the exchange of health-related interests and the establishment of a supportive community [29]. These findings are consistent with earlier research [31,32] that have examined the connection between social support and quality of life across different populations. Specifically, these research have highlighted social support as a significant factor that affects the quality of life related to health. Social support not only enhances enjoyment and alleviates stress, but also enhances the quality of life (QoL) for migrant workers [33], hence improving their health-related quality of life (HRQoL). Hence, it is imperative to provide proactive assistance in order to enable migrant workers to establish self-help collectives, thereby improving their ability to manage stressful circumstances and cultivate good emotions.

The inability to test the construction workers for HIV was a limitation of this study. Furthermore, research on the use of personal protective equipment and its effect on preventing workplace injuries was not feasible.

It is imperative that behavior change communication be used to target lifestyle diseases like addiction and vector-borne diseases, as well as the use of personal protective equipment to prevent injuries. In order to diagnose infected patients early and ensure that they receive radical treatment under supervision at the construction site, active surveillance of fever cases should be prioritized.

## Conclusions

Fever, respiratory disease, Skin disease, Eye disease, gastrointestinal system disease and musculoskeletal problems were the common illnesses present among the workers. Health seeking behaviour was poor among the respondents where about 35% of the respondents had not vaccinated their children upto age and about 13% of the respondents went to nearby medical shop when they have any medical problems. About three fifth of the respondents were having poor quality of life. Having good education, having moderate work hours and avoiding tobacco are determinants of having good quality of life.

## Recommendations

The pattern of health issues among construction workers revealed by this study will help in the future development of worker-specific health promotion initiatives. Efforts should be made to improve their health seeking behaviour. Moderation of their working hours and behaviour change communication to avoid tobacco will improve their quality of life. Awareness should be created to them about the importance of education in improving the quality of life.



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