

A Community Based Study on the Morbidity Profile of Construction Workers in a Rural Area in Thiruvallur, Tamilnadu, India

Kamalakaran. M
Investigator:

Dr. Gomathi Parasuraman,
Guide: Associate Professor,
Department of Community Medicine.

Abstract:-

➤ Introduction:

Construction sector provides widespread opportunities for employment of most of the poorest and most marginalised sections of society in India. These construction workers suffer illness by many factors out of which their work environment plays a pivotal role in causing illness or morbidity. The important cause of functional disability among these workers is the respiratory and musculoskeletal disorders.

➤ Objectives:

To study morbidity pattern among construction workers. 2. To study the predisposing factors associated with various health issues among workers.

➤ Materials and Method:

A Cross sectional study was conducted at various construction sites in Thiruvallur district, Tamilnadu, India. It comprises 223 construction workers who were working at these sites. The study period was from January 2019 to March 2019. A pre-tested questionnaire was administered to all the study subjects. Clinical examination was conducted on all study subjects. Data analysis was done using SPSS software version 25. Descriptive statistics are calculated for background variables and morbidity pattern.

➤ Results:

A Total of 223 construction workers were enrolled in this study. It was found that 84%(187/223) of them were between 14-50 years, and 71%(158/223) were illiterates. Immigrant workers among these are 55%(123/223). It has also been found that 79%(176/223) workers had habits of smoking or alcohol consumption or both. The percentage of morbidity among workers is 78(174/223). Of the various types of morbidities, musculoskeletal problems are the most common illness with 69%(154/223) prevalence followed by the respiratory problems with the percentage of 59(132/223), skin problems in 52%(116/223), and ocular morbidity in 51%(114/223).

➤ Conclusion:

It is concluded that the morbidity profile among construction workers is largely associated with smoking, drinking habits, accidents and long exposure to dust in that environment. Workers mainly had complaints of respiratory illness and musculoskeletal illness. There is an urgent need to create awareness among the workers about their health and safety issues, working environment, proper use of protective wears, provision of first aid, referral services and sanitation at their living and workplace. In addition, the burden for lifting heavy materials by workers should be reduced by measures taken by construction companies(modern technologies) thus managing to prevent musculoskeletal illness.

I. INTRODUCTION:

Construction sector provides widespread opportunities for employment of most of the poorest and most marginalised sections of the society in India. The Construction industry sector of India is an important indicator of the development as it creates investment opportunities across various related sectors. The sector is labor-intensive and, including indirect jobs, provides employment to numerous people. This study deals with Occupational health which is concerned with health of the workers in its relation to work and working environment.

The workers involved in construction activities of buildings come under unorganised sector of employment conditions[1]. There are such 8.5 million workers engaged in building and other construction activities in India. They constitute the most vulnerable segment amongst the unorganised workforce in the country owing to their temporary nature of work and lack of a definite employee-employer relationship[2].

These construction workers suffer illness by many factors out of which their work environment plays a pivotal role in causing illness or morbidity. The important causes of functional disability among these workers are the musculoskeletal and respiratory disorders. Exposure to cement dust for longer duration of period could lead to different respiratory ailments including silicosis, lung cancer, chronic obstructive lung disease, bronchitis and emphysema[3,12].

The main two objectives of this research were to study the morbidity pattern among construction workers and to study the predisposing factors associated with various health issues among them.

II. METHODOLOGY:

A community based cross sectional study was conducted at various construction sites in Thiruvallur district, Tamilnadu, India. It comprises 223 construction workers who were working at those sites. The sample size for this study was calculated based on morbidity status in a previous study done by P.Mohankumar et al., where 44.3% construction workers were found to be suffering from external injuries[2]. This prevalence rate of external injuries was taken as reference value and using the formula $4PQ/D^2$, the sample size was calculated with a limiting accuracy of 15%. All workers above the age of 14 and who were willing to participate in this study were included.

A pre-tested questionnaire was administered to all the study subjects. Prior permission from the construction authorities(supervisors) of those sites was taken for data collection and a structured questionnaire was administered(on an interview basis) to workers during the break time.

First the questionnaire started with demographic details like name, age, sex, education, religion, socio-economic status(Modified Kuppusamy Scale), standard of living index, height and weight. Then the questionnaire contained questions on occupation related information and health related information. Also clinical examination was conducted on all the study subjects. As the study included large number of immigrants, help of a translator was needed to collect data from them. The participants were briefed about the study and informed consent was obtained prior to the data collection.

The main aim of this study was to assess the morbidity profile of these workers. The study was done for 3 months from January 2019 to March 2019. Data entry and analysis was done using SPSS software version 25. Descriptive statistics were calculated for the background variables and morbidity pattern. Chi-square test was employed as a test of significance.

III. RESULTS:

Out of 223 construction workers who took part in this study, majority of study subjects were between 14-50 years of age(84%) and most of them were illiterates(71%). Of the total workers, 55% were immigrants mostly from Bihar, Uttar pradesh, etc. It has also been found that 79% workers had habits of smoking or alcohol consumption or both.

There was at least one health problem(morbidity) in 78% of construction workers which is more than 3/4th of the study population(174/223). Of the various types of

morbidities, musculoskeletal problems are the most common illnesses with 69% prevalence, followed by the respiratory problems found in 59% of workers, skin problems in 52%, ocular morbidity in 51%, gastric problems in 48%, external injuries in 46%, Central nervous system problems in 22% and Cardiac problems in 20% of the study population.

| Age group (in yrs) | No. of workers | Percentage |
|--------------------|----------------|------------|
| 14-24 | 22 | 10 |
| 25-34 | 65 | 29 |
| 35-44 | 69 | 31 |
| 45-55 | 67 | 30 |

| Education | No. of workers | Percentage |
|----------------|----------------|------------|
| Illiterates | 158 | 71 |
| Primary school | 39 | 17 |
| High school | 27 | 12 |

| Habits | No. of workers | Percentage |
|----------|----------------|------------|
| Smoking | 47 | 21 |
| Alcohol | 89 | 40 |
| Gutka | 62 | 28 |
| No habit | 25 | 11 |

Table 1: -Demographic Details of Construction Workers

| Morbidity | No. of workers | Percentage |
|-------------------------------|----------------|------------|
| Musculoskeletal problems | 154 | 69 |
| Respiratory problems | 132 | 59 |
| Skin problems | 116 | 52 |
| Ocular problems | 114 | 51 |
| Gastric problems | 107 | 48 |
| External injuries | 103 | 46 |
| CNS problems | 49 | 22 |
| Cardiac problems | 45 | 20 |
| Atleast one morbidity present | 174 | 78 |

Table 2:- Morbidity Profile of the Construction Workers

| Personal habit | N=223 Number of workers | Morbidity presence (at least one) -Number | Morbidity presence (at least one) -percentage | Chi-square value | p-value |
|--------------------|----------------------------|--|--|---------------------|---------|
| smoking present | 47 | 38 | 80.8 | 6.9 | 0.01 |
| smoking absent | 176 | 106 | 60.2 | | |
| alcohol present | 89 | 79 | 88.7 | 28.97 | 0.001 |
| alcohol absent | 134 | 73 | 54.5 | | |
| Gutka present | 62 | 49 | 79 | 13.42 | 0.00025 |
| Gutka absent | 161 | 84 | 52.2 | | |

Table 3:- Association between Risk Factors and Morbidity Pattern

IV. DISCUSSION:

The current study is a cross sectional study carried out among 223 construction workers at various construction sites in a rural area in Thiruvallur, Tamilnadu. In this study, we could clearly note that 78% of the total construction workers under study have had at least one health problem and musculoskeletal problems being the most common problem found in 69% of construction workers. It is followed by respiratory problems of prevalence 59% and skin problems of prevalence 52%. Rajnarayan R. Tiwari et al in their study observed Work-related musculoskeletal disorders are an important cause of functional impairments and disability among construction workers[9]. In addition this study shows that 55% of construction workers were immigrants from other parts of the country like Bihar, Uttar Pradesh, Jharkhand, Maharashtra, Uttarakhand.

Similarly in studies conducted in Bangalore and other northern states, there were more number of migrants than the locally residing people[3]. In a study by P Mohankumar et al., there were 70.5% migrant workers among the study population in an urban area of Kanchipuram District, Tamilnadu[2]. Comparatively, in this study, there are lesser percentage of immigrant workers. This factor of immigration would signify the spread of certain endemic diseases either to the migrant area or from the migrant area.

So there exists the risk of transmission of endemic diseases but during this study, no such transmission was identified. The concept of immigration would be mainly due to socio-economic compulsions which could make them vulnerable to be affected of their health status.

This study also provides the results that there are 21% smokers, 40% alcoholic, 28% people consuming gutka and only 11% do not have any of these habits. The presence of any health morbidity in these workers with smoking or drinking habits is the vital statement to be considered. But these habits were found to be common in construction workers as known from other similar studies. In a study by P Mohankumar et al., 63.9% of the workers smoked, 57.6% used tobacco in other forms and 62.9% consumed

alcohol[2]. Compared to other studies, there seems to be a similar pattern of prevalence of these habits among construction workers

As proposed earlier by many studies that personal habits turn out to be risk factor for various health problems, this could be one of the prime reasons for the wide prevalence of morbidity among these construction workers.

In this study, the workers were checked for the presence of hypertension and it was found that 10.5% suffered from hypertension[8]. The subjects were asked for their height and weight so that BMI could be calculated. Study shows 85% were within normal limits, 6% were overweight and 9% were underweight. In a study by Sandeep H et al., in Bangalore, 58.7% were normal, 30.8% were underweight and 9.8% were overweight[5]. Compared to that study, prevalence of underweight was less in this study.

It was found that there were 78% of the total workers under study(174/223) who have had at least one health related morbidity. In some other studies by Adsul BB et al., and P Mohankumar et al., similar results were obtained[2,4]. But many other studies done over different locations had differing results showing that there is wide variation in this criteria[6]. This also denotes the significance of the area of construction which plays some degree of role in health pattern of those construction workers.

The high prevalence may be due to improper training and inadequate use of protective devices, lack of safety measures at work place, increased use of smoking, tobacco chewing and alcohol consumption, unhygienic practises etc.

This study proposes a strong association between morbidity pattern and personal habits of smoking, alcoholism, gutka and tobacco chewing, etc. In addition, other studies have shown a similar trend. In a study by Patel C et al., they found that there was a strong statistical association between the type of work, duration of work, habits, and health of construction workers[7].

V. CONCLUSION:

It is concluded that the morbidity profile among construction workers is largely associated with smoking, drinking habits, accidents and long exposure to dust in that environment. As the aim of this study was to assess the predisposing factors that cause health issues in these workers, the conclusion would be arrived to manage and take appropriate measure to suppress the risks at any cost. Workers mainly had complaints of respiratory illness and musculoskeletal illness. There is an urgent need to create awareness among the workers about their health and safety issues, working environment, proper use of protective wears, provision of first aid, referral services and sanitation at their living and workplace[10]. In addition, the burden for lifting heavy materials by workers should be reduced by measures taken by construction companies(modern technologies) thus managing to prevent musculoskeletal illness. There are national health programs pertaining to the benefit of construction workers that have to be strengthened and to create awareness about Rashtriya Swasthya Bima Yajana, 'The Building and Other Construction Workers Act, 1996' which further help in widening the chances of their health betterment and proper use of their rights. Healthy India is possible by joint effort and care.

REFERENCES

- [1]. Report of the Committee on Unorganized Sector Statistics, National Statistical Commission Government of India, Share of labour input in unorganized sector construction, February 2012, and Table 4.2
- [2]. P Mohankumar, S Gopalakrishnan, M Muthulakshmi Morbidity Profile and Associated Risk Factors among Construction Workers in an Urban Area of Kancheepuram District, Tamil Nadu, India.J of clinical and diagnostic research2018 Jul, Vol-12(7): LC06-LC09
- [3]. Deshmukh SA, Ghooli S. A Study of Morbidity Pattern among Construction Workers in Kalaburagi, North Karnataka, India. Ntl J of Community Med. 2015;6(3):411-14.
- [4]. Adsul BB, Laad PS, Howal PV, Chaturvedi RM. Health problems among migrant construction workers: A unique public-private partnership project. Indian J Occup Environ Med. 2011;15(1):29-32.
- [5]. Sandeep H, Shashikala M, Ramya KS. Morbidity profile of construction workers aged above 14 years in selected areas of Bangalore urban district. Journal of Evolution of Medical and Dental Sciences. 2015;4(49):8552-60.
- [6]. Brindha V. Prevention of Occupation Health Hazards among stone workers. Nightingale Nursing times. 2005;1(9):17-19.
- [7]. Patel HC, Moitra M, Momin MI, Kantharia SL. Working conditions of male construction worker and its impact on their life: a cross sectional study in Surat city. Natl J Community Med. 2012;3(4):652-56.
- [8]. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. NIH Publication. 2004; Pp.12, Table-3. Available from: <https://www.nhlbi.nih.gov/files/docs/guidelines/jnc7fu11.pdf>. Last Accessed 4 Nov 2017.
- [9]. Rajnarayan R.Tiwari, Yashwanth, K.Sharma, Habibullah N. Saiyed. Peak Expiratory Flow: A Study among silicaexposed Workers. Indian journal of occupational and environmental medicine 2004.Vol 8, issue 1, page no.7-10.
- [10]. Government of India, Ministry of Labour and Employment, Annual Report 2014-15, Pp. 65.
- [11]. Gurav RB, Kartikeyan S, Wayal R, Joshi SD. Assessment of daily wage laborers. Indian J Occup Environ Med. 2005;9(3):115-17.
- [12]. Sashidharan C, Mohan Kumar P, Gopalakrishnan S. Prevalence and determinants of external injuries among industrial workers in an urban area of Kancheepuram district, Tamil Nadu. Int J Community Med Public Health. 2017;4:4722-27.
- [13]. Gupta A, Gokhale RM. Study the association of demographic factors and health status of construction workers. Int J Community Med Public Health. 2016;3(8):2164-68.