

## **A Study on Occupational Health Hazards of Brick Workers in Eral Block, Thoothukudi District**

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### **Abstract**

*The spurt in construction activities, especially houses, thanks to the easy availability of housing loans, there has been an ever increasing demand for the bricks. Hence so many brick units have come up and hundreds of workers are engaged in brick making. They are facing the some problems like any other brick workers in other parts of our Tamil Nadu. However the present study would be appropriate to take up the study of bricks workers and their problems in the region concerned and make the research work a worth while and a relevant one. The brick industry is considered a vital one in many respects. It provides major employment opportunities to poor people in Eral block of Thoothukudi district. In this research, the brick workers are not highly satisfied with their job but they are forced by their tradition and the financial condition of their family. The major problem of the brick workers is low income and they are also suggested they want the government to fix the minimum wages.*

**Key Words:** *Brick Workers, Construction and Occupational Problems*

### **Introduction**

The production of brick was industrialized in the 19th century. The laborious process of hand-moulding, which had been used for 3,000 years, was superseded by "pressed" bricks. These were mass-produced by a mechanical extrusion process in which clay was squeezed through a rectangular die as a continuous column and sliced to size by a wire cutter. There was also a proliferation of elaborately shaped and stamped masonry units. Periodically fired beehive kilns (stoked by coke) continued to be used, but the continuous tunnel kiln, through which bricks were moved slowly on a conveyor belt, had appeared by the end of the century. The new methods considerably reduced the cost of brick, and it became one of the constituent building materials of the age.

For the purpose of the study Eral block in Thoothukudi District has been selected. Eral block is situated on the northern bank of river Thamiraparani. The main occupation of the people has been cultivation of betel leaves, banana and paddy. Pottery and brick making has been a subsidiary occupation even from the dawn of the 20<sup>th</sup> century. In order to capitalize on the ever increasing demand for bricks many people now consider brick making a good business proposition. The suitability of the soil for making quality bricks and the abundant supply of water and labour force also paved way for the success of these units. At present there are about 40 brick making units in Eral. Eral bricks workers supplies bricks to both Thoothukudi and Tirunelveli districts. There is concentration of brick industry in Eral area, which is in the unorganized sector. So far no study has been conducted mainly on the brick workers and their problems in Eral block. Hence this study assumes importance.

### **Statement of the Problem**

The present study pertains to the workers of brick in Eral block. Due to the spurt in construction activities, especially houses, thanks to the easy availability of housing loans, there has been an ever increasing demand for the bricks. Hence so many brick units have come up and hundreds of workers are engaged in brick

making. They are facing the some problems like any other brick workers in other parts of our Tamil Nadu. However the present study would be appropriate to take up the study of bricks workers and their problems in the region concerned and make the research work a worth while and a relevant one.

### Review of Literature

Amal Mandal (2010) in his paper remarked that economic compulsions coerce the vast majority of poor women workers to perform strenuous manual labour for survival. This is a report on the conditions that are debasing and discriminatory of women workers in brick production.

Sadek Deboucha et al., (2011) in their paper is a review of the state of uses of clay bricks and stabilized compressed earth blocks. They offer an overview of the world general building using clay bricks or stabilized compressed earth blocks compiled from various research organizations, modern projects which have been carried out and reports from existing manufacturing of clay bricks or stabilized compressed earth blocks. Although, stabilized compressed earth blocks as construction materials are highly unknown to most people, its advantages are seen in terms of rescuing the heritage and also as rediscovered environmentally friendly building materials.

Rufiat N. Kazi et al., (2018) in their paper reveals that occupational hazards involving the respiratory system, musculoskeletal system, skin and eyes are very commonly seen in the workers involved in the brick kiln industry. This study was designed to assess health profile of the brick kiln workers and to discuss sociodemographic profile affecting their health. This was a cross sectional study. 420 workers falling into the eligibility criteria, were selected from the 65 brick kiln factories in the study area. Multi-stage cluster sampling method was used to select the brick kiln factories and the participants of the study. The responses given by the participants were entered in Microsoft Excel 2010 and analyzed using SPSS version 20. Chi Square test was used to determine the association between the morbidities and sociodemographic variables. Mean age of the workers was  $35.34 \pm 10.96$  years. 96.7% of the respondents were suffering from some or the other complaints, while 3.3 per cent were not suffering from any complaints. Addiction was seen in 37.9 per cent of the participants. Musculoskeletal complaints were the most common complaints followed by respiratory and skin complaints. Health of workers is affected due to conditions they work under. The older age group had more respiratory, dermatological and ophthalmic complaints. The group of workers employed as bigaaris as well as those who were working for more than 10 years had more respiratory and dermatological complaints.

### Objectives of the Study

**Table: 1– Nature of Employment**

Nature of Employment	No. of Respondents	Percentage
Permanent full time	22	18.33
Permanent part time	28	23.34
Temporary full time	52	43.33
Temporary part time	18	15.00
<b>Total</b>	<b>120</b>	<b>100.00</b>

Source: Field Survey

From the above table it is clear that majority of the brick workers (43.33%) are engaged temporary full time in brick making. About 18.33 per cent of the workers are employed permanently on full time basis. About 23.34 per cent of the workers are alone working in bricks for a permanent part time basis. Remaining 15 per cent of the workers work in bricks on a temporary part time basis.

### Reason for Joining the Present Employment

The reason for joining the present employment expressed by brick workers is classified in the following table 2.

**Table: 2 - Reason for Joining the Present Employment**

Reason	No. of Respondents	Percentage
Could not get any other Job	62	51.67
Lack of Education	19	15.83
Income Generation	21	17.50
Inheritance Job	18	15.00
<b>Total</b>	<b>120</b>	<b>100.00</b>

Source: Field Survey

It is clear from the table 2 that 51.67 percentage of brick workers expressed that they could not get any other job, 15.83 percentage of them expressed that they got this job due to lack of education, 17.50 percentage of them expressed that they got this job due to income generation and the remaining 15 percentage of them expressed that they get this job due to inheritance work. Hence, majority of the brick workers expressed that they are not able to find any other job in the study area and so they joined this job.

### Occupational Hazards

Because of their constant touch with the clay, the workers are often complained of ‘anemia’. Another major ailment for the brick workers is low back pain caused for they do their work by ‘squatting’ most of the time. They also complain about skin diseases, burning and itching in eyes during the burning of bricks, head ache and body pain. Majority of the workers (60 %) are affected by occupational hazards and the remaining 40 per cent of the respondents are not affected by the occupational hazards.

### Nature of Occupational Diseases

Occupational health hazards have been recently given more importance because of the increase in occupational diseases. The occupation itself causes a variety of health problems. The types of diseases affecting the brick workers are presented in Table 3.

**Table: 3 – Nature of Occupational Diseases**

Nature of Occupational Diseases	No of Respondents	Percentage
Anemia	10	8.33
Back Pain	52	43.34
Skin Diseases	14	11.67
Burning & Itching	16	13.33
Head Ache	28	23.33
<b>Total</b>	<b>120</b>	<b>100.00</b>

Source: Field Survey

It is evident from the Table 3 that 43.34 per cent of the brick workers are affected by back pain, 23.33 per cent of the workers are subjected to frequent head ache, 13.33 per cent of them are affected by burning and itching on eyes, 11.67 per cent of them report that they have the problem of skin diseases and only 8.33 per cent of the workers are affected by anemia. It is observed that a great majority 43.34 per cent of the brick workers are reported to have back pains. The reason is that they sit in a particular posture to work for hours together.

### Binary Logistic Regression Analysis of Occupational Diseases Prevalence

There are various causes of morbidity among individuals, but this paper emphasises on the socio-demographic and living environment of the brick workers and its association with the level of morbidity among them.

**Table: 4 - Results of Binary Logistic Regression of Occupational Diseases in the Brick Workers (n=120)**

Background Characteristics		Odds Ratio	P value	95% C.I.
Sex	Male			
	Female	1.120	0.6270	0.639– 1.737
Age	Below 40			
	Above 40	1.984	0.670	0.914 – 2.060
Marital Status	Unmarried			
	Married	2.863	0.145	0.695 – 11.796
Education	Illiterates			
	Educated	0.690	0.083	0.383 – 1.628
Experience	Less than 10 Years			
	More than 10 years	4.003	0.002	0.987 – 6.229

Source: Calculated from Field Survey

Table 4 reveals that the odds ratios of binary logistic regression of occupational diseases among brick workers. Gender differentials were observed in the prevalence of occupational diseases among brick workers. Results show that the female brick workers were 1.120 times more likely to suffer from occupational diseases compared to male workers. The age of the brick workers were 1.984 also had a significant effect on the risk of reporting occupational diseases. The marital status of the brick workers were 2.863 had also impacted on the risk of ailments. Divorced/separated and married brick workers are more likely to report occupational diseases than the unmarried workers. The association between the level of occupational diseases and educational status shows that the chances of occupational diseases are reducing with a higher level of education. The odds ratio 0.690 indicates that the educated brick workers 31 per cent less likely to report ailments than the illiterate. It shows that educational attainment can contribute to the reduction of occupational diseases and the probable reason is health awareness among them.

The workers experience reflects that the rate of occupational diseases was less among those workers who high experience than the others. Results show that those workers were 4.003, who low experience of the brick works, were four times more likely to report occupational diseases than the higher experience brick workers.

### Respondents Views about Medical Facility

Invariably all the respondents suffering from occupational diseases are of the view that such diseases do affect their earning capacities. The institute/agency through which they are treated for occupational diseases is furnished in the Table 5.

**Table: 5 - Respondents views about Medical Facility**

Institute/Agency	No. of Respondents	Percentage
Government Hospital	53	44.16
Private hospital	38	31.67
Local Treatment	29	24.17
<b>Total</b>	<b>120</b>	<b>100.00</b>

Source: Field Survey

The table 5 clearly shows that out of 53 respondents, 44.16 percentage of the respondents take treatment for occupational diseases from government hospital, 31.67 percentage of the workers go to private nursing homes for treatment and 24.17 percentage of the brick workers take local treatment for occupational diseases.

It is observed that among all the brick unit, only few brick industry are providing their workers first aid medical facility. Workers employed in these units could get first aid treatment through their company dispensary. No other brick unit in the block is giving its workers medical facility. For getting treatment from government hospital, the workers will have to cut work and thus lose wages for the day staying away from the work. Also, they are incurring additional expenditure by visiting hospital. The same thing can be said of those workers who take treatment from private nursing homes and local treatments.

### **Job Satisfaction of the Brick Workers**

The starting point of the brick workers is the form of satisfaction, through some of the factors. Opinion of the respondents as to whether they are satisfied with the job or not and willing to continue in the same job or to try for any other job is presented in Table 6.

**Table: 6 – Job Satisfaction of the Brick Workers**

Opinion	No of Respondents	Percentage
Yes	96	80.00
No	24	20.00
<b>Total</b>	<b>120</b>	<b>100</b>

Source: Field Survey

Majority (80%) of the respondents are satisfied with the present job that they undertake. The remaining 20 per cent of the workers are not satisfied their present job because they get only limited income.

### **General Problems Faced by the Brick Workers**

The general problems were faced by the brick workers in Eral block of Thoothukudi district. The brick workers are asked to rank the five problems according to their preferences.

### **Garrett Ranking Technique**

Garrett ranking technique was used to rank the problems. The ranks were assigned and points were given in the following order.

- 1 – Rank = 5 points
- 2 – Rank = 4 points
- 3 – Rank = 3 points
- 4 – Rank = 2 points

5 – Rank = 1point

After assigning points to various ranks, the Garrett mean score was calculated by using the following formula.

$$\text{Present Position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

where,

$R_{ij}$  – Rank given for the  $i^{\text{th}}$  reason by  $j^{\text{th}}$  respondents

$N_j$  – Number of factors ranked by  $j^{\text{th}}$  respondents.

**Table: 7 - Garrett Mean Score – General Problems faced by the Brick Workers**

Problems	Garrett Ranking Mean Score	Rank
Low Income	61.49	III
Hazardous Work	62.65	II
Health Problem	58.39	V
Long Working Hours	63.28	I
Seasonal Work	59.48	IV

Source: Field Survey

From the above table 7 it is clear that long working hours was the main problem faced by the brick workers, which secured 63.28 per cent mean score. Then hazardous work was the second most important problem and it secured 62.65 per cent. Health problems (58.39%) were the least important problem faced by the brick workers in Thoothukudi district.

### Suggestions for Betterment of Brick Workers

The following table shows the brick workers suggestions for improving the standard of living and their work.

**Table: 8 - Suggestions for Betterment of Brick Workers**

Suggestions	No. of Respondents	Percentage
Labour Union	15	30
Govt. Fixing Minimum Wage	16	32
Loan Facilities	10	20
Alternative Job	9	18
<b>Total</b>	<b>50</b>	<b>100</b>

Source: Field Survey

As found in the table 8, 32 per cent of the brick workers want the government to fix the minimum wages. Efficient labour union is expected to improve the standard of living according to 30 per cent of the brick workers. Out of the total 20 per cent of the brick workers feel that loan facilities with low rate of interest are the next

suggestion. The remaining 18 per cent of brick workers want alternative job because the brick workers is also seasonal one. A majority (32%) of the brick workers want the Government to fix the minimum wages.

### **Suggestions**

1. They should organize themselves an association in an effective manner so that they can maintain their income.
2. The NGO's can play an effective role in making the workers aware of their rights and responsibilities.
3. Medical camps and eye camps can be organized by the social workers along with employers of the brick industries for the benefit of these workers in rural areas.
4. The brick workers are ignorant of availing financial assistance from nationalized banking institutions. Hence they are forced to seek the help of middlemen. By liberalizing the loan facilities, especially to brick workers, self-employment can be promoted among them.
5. It is to be noted that, the brick workers are unorganized, have no union to support their working and living conditions. Their contribution to national economy is significant, but there is no official or unofficial record of their existence and their contribution to the national economy. Extensive research is needed to provide data on their economic and social conditions. Such research will help the policy makers while decisions are taken.

### **Conclusion**

The brick industry is considered a vital one in many respects. It provides major employment opportunities to poor people in Eral block of Thoothukudi district. In this research, the brick workers are not highly satisfied with their job but they are forced by their tradition and the financial condition of their family. The major problem of the brick workers is low income and they are also suggested they want the government to fix the minimum wages. Majority of the brick workers also suggested that the government should pay the insurance premium for brick workers and workers. The Government should also help the brick workers to provide subsidy and also loan facilities with low rate of interest from bank.

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